

# The Chemical Bulletin

<http://chicagoacs.org>

OCTOBER • 2015

## CHICAGO SECTION AMERICAN CHEMICAL SOCIETY JOINT MEETING WITH NORTHWESTERN UNIVERSITY DEPARTMENT OF CHEMISTRY FRIDAY, OCTOBER 30, 2015

### LOCATION

Northwestern University –  
Technological Institute, Room LR3  
2145 Sheridan Rd  
Evanston, IL

### DIRECTIONS TO THE MEETING

**From the city:** Take Lake Shore Drive North to Sheridan Road into Evanston. Continue on Sheridan Road to the Tech Institute at Noyes Street.

**From the west:** Take I-88 east to I-294 north to Dempster east. Proceed east on Dempster into Evanston. Turn left onto Chicago Ave. and proceed to Sheridan Road. Take Sheridan Road north to the Tech Institute at Noyes Street.

**Parking:** To those attending the Basolo Medal lecture, parking after 4:00 p.m. is available in the lot across from the Technological Institute at the corner of Noyes Street and Sheridan Road. Parking is also available on the side streets just west of this lot; however, observe the posted signs. Please see Section's website for campus map of additional parking options.

Lecture Room 3 is on the first floor of

the Technological Institute and is most easily reached by entering through the main doors facing Sheridan Road. The lecture hall is clearly marked and there will be signs at the entrance to guide you to the room.

The Medalist Lecture is open to the public and admission is free to all those wishing to attend.

**REFRESHMENTS SERVED  
(TECH LR3) 4:30 PM**

**WELCOME &  
INTRODUCTION 4:45 – 4:50 PM**

**MULTI-ELECTRON  
CATALYTIC TRANSFORMATIONS  
OF CO<sub>2</sub> TOWARD  
LIQUID FUELS 5:00 PM – 6:00 PM**

**WINE AND HORS  
D'OEUVRES (JAMES L.  
ALLEN CENTER) 6:00 PM – 7:00 PM**

**DINNER AND  
ACS GENERAL  
MEETING 7:00 PM – 8:00 PM**

**PRESENTATION OF  
THE BASOLO MEDAL 8:00 PM**



**Dr. Clifford P. Kubiak**  
Distinguished Professor of Chemistry  
and Biochemistry  
Harold C. Urey Chair in Chemistry  
University of California, San Diego

### "Multi-electron Catalytic Transformations of CO<sub>2</sub> Toward Liquid Fuels"

Electrocatalysts for the reduction of CO<sub>2</sub> are of interest in the production of solar fuels, and as a means of mitigating atmospheric CO<sub>2</sub>. In this lecture, the major accomplishments in the activation and chemical reduction of CO<sub>2</sub> will be presented. This will be in part a historical account of the early breakthroughs in the activation of CO<sub>2</sub>, its (limited) use as a ligand, and its reduction by molecular and heterogeneous electrocatalysts. The lecture will then introduce recent new approaches to developing catalysts for the reduction of CO<sub>2</sub> including those with proton relays in associated ligands

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to manage proton transport, those designed to undergo proton coupled electron transfer for efficient H-atom transfers, supramolecular catalyst assemblies that use non-covalent interactions to direct catalyst centers toward substrate activation, artificial metalloprotein electrocatalysts, and Metal Organic Framework (MOF) electrocatalyst materials. The general properties of molecular catalysts on conducting substrates under bias as probed by surface spectroscopies will be discussed to highlight to challenges to researchers attempting to do catalysis at an electrified interface. The question of which solar fuels should be made from CO<sub>2</sub> will be discussed. Unlike water splitting where a single reduced product (H<sub>2</sub>) is obtained, the reduction of CO can produce CO, HCOOH, H<sub>2</sub>CO, CH<sub>3</sub>OH, CH<sub>4</sub>, as well as many C<sub>2</sub> and higher products. Which product(s) will be produced from solar energy, is not presently known. Results from several recent approaches to producing higher value solar fuels from CO<sub>2</sub> including synthetic biology and tandem catalysis will be presented.

**BIOGRAPHY:** Clifford P. Kubiak received a Sc. B. degree with honors in chemistry from Brown University (1975) and a Ph. D. in chemistry from the University of Rochester (1980), where he worked with Richard Eisenberg. Kubiak was a postdoctoral associate with Mark S. Wrighton at M. I. T. (1980-81) and subsequently became a faculty member at Purdue University from 1982 – 1998. He moved to UCSD in 1998 as Harold C. Urey Professor, and served as Chair of the Department of Chemistry & Biochemistry (2002-2006). Kubiak was named Distinguished Professor at UCSD in 2008. He has held visiting appointments at Tohoku University, University of Chicago, University of Erlangen, and University of Paris Diderot. He has been Visiting Associate in Chemistry – JCAP at California Institute of Technology since 2012. Kubiak was the recipient of the ACS Award in Inorganic Chemistry (2012), Inter-American Photochemical Society Award in Photochemistry (2013), and he was elected to the American Academy of Arts & Sciences (2014). He has served on the Editorial Advisory Boards of Accounts of Chemical Research, Inorganic Chemistry, and Materials Science in Semiconductor Processing and is the author of 230 scientific articles. Kubiak's research is in catalytic transformations of CO<sub>2</sub>, artificial photosynthesis, ultra-fast electron transfer within the ground states of inorganic mixed valence systems, and theoretical and experimental investigations of electrical conductivity of molecular assemblies.

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## MENU

\*Beer/Wine Bar before dinner & Hors D'oeuvres

### Salad:

Baby Lola Rosa Salad w/ Balsamic Strawberries, Toasted Almonds and Crumbled Boursin with Balsamic Vinaigrette

### Entrée Choices:

\*Stuffed Filet of Beef with Sun Dried Tomatoes, Baby Spinach, Feta Cheese with Oregano Olive Oil

\*Grilled Swordfish with Italian Salsa Verde

\*Pan Seared Free Range Chicken Breast with Crispy Bacon and Onion Ragout

\*Pumpkin Ravioli with Brown Butter, Parmesan and Crispy Sage

### Dessert:

\*Apple Tart Tatin w/ Vanilla Bean Ice Cream & Blackberry-Balsamic Reduction

## REPORT OF COUNCIL MEETING IN BOSTON

The 250th National Meeting of the ACS was held in Boston, MA, from August 16 – 20, 2015. The theme of this meeting was "Innovation from Discovery to Application" The Chicago section was represented by Charles Cannon (Local Section Activities), Dave Crumrine (Constitution and Bylaws), Ken Fivizzani (Community Activities), Russ Johnson (Chemistry and Public Affairs) Fran Kravitz (Local Section Activities), Margaret Levenberg, Milt Levenberg (Public Relations and Communication), Inessa Miller, Barbara Moriarty (Science) and Susan Shih (Education). The national activities of each are given, as I know them.

**Finances:** The Society's 2014 year-end financial projections were reviewed. The Society is expected to end 2014 with a Net Contribution from operations of \$17.9 million on revenues of \$499.0 million and \$481.1 million in expenses. This is \$4.2 million favorable to the 2014 Approved Budget. The Society met four of the five Board-established Financial Guidelines, but did not meet the reserve adequacy guideline again in 2014.

The Society's 2015 probable year-end financial projections indicate a net contribution from operations of \$15.5 million or \$2.1 million higher than the Approved Budget. In addition, the Society's 2015 probable year-end financial projections indicate total expenses of \$496.6 million and \$512.1 million in total revenues. Both are slightly favorable to the Approved budget; the variance is due to lower than budgeted expenses across all major expense categories.

The Board of Directors voted on the recommendation of the Society Committee on Budget and Finance, to approve an advance member registration fee of \$415 for national meetings held in 2015.

**Governance:** Charles Cannon and Dave Crumrine were recognized for their 15 years of service to Council. Barbara Moriarty was recognized for her 20 years of service to Council.

The Council elected councilors to serve on the Committee on Committees, the Council Policy Committee and the Committee on Nominations. Fran Kravitz was nominated for service on the Committee on Committees. For the Committee on Committees – Christopher Bannochie, Michelle Buchannon, Alan Cooper, Donna Friedman and Carolyn Ribes were elected for full three year terms, while Jetty Duffy-Matzner was elected for a two-year term. For the Council Policy Committee – Frank Blum, Marry Carroll, Lisa Houston and Lee Latimer were elected to full terms. For the Committee on Nominations and Elections – Mary (Moore) Engelman, Roland Hirsch, C. Marvin Lang, Les McQuire and Donovan Porterfield were elected to full terms.

The candidates for the fall 2014 ACS national election for President-Elect 2015 are G. Bryan Balazs and Allison A. Campbell. This year, members of District V are electing a Director. The candidates are our own Ken Fivizzani and John E. Adams. Candidates for Directors-at-Large, who are elected by Council, are Lee Latimer, Willem Leenstra, Ingrid Montes, Mary Jo Ondrechen and Thomas W. Smith.

**Meetings and Expositions:** The attendance at the Boston meeting was reported to be 13,888 with 9,271 papers. The Exposition had 475 booths with 325 exhibiting companies. There were 5,500 downloads of the Mobile App for the meeting; this is the last meeting that paper copies of the program book will be available for free in order to make the meeting "greener".

**Committee on Economic and Professional Affairs (CEPA):** The Committee on Economic and Professional Affairs (CEPA) reported that the unemployment rate for member chemists was 3.1% up from 2.9% in 2014; this compares to the 5.5% total unemployment rate. The on-site career fair at the meeting had 846 job seekers and 58 employers with 229 jobs. The virtual career fair, scheduled for mid-September had additional job seekers and employers.

**Local Sections:** The theme for National Chemistry Week, to be held October 18-24, is "Chemistry Colors Our World."

If you have any questions and/or comments about the above actions, please contact me or one of your other representatives. You may contact me by email ([barbaramoriarty0@gmail.com](mailto:barbaramoriarty0@gmail.com)).

BARBARA MORIARTY

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## BASOLO MEDAL

The Fred Basolo Medal is given for outstanding research in inorganic chemistry. It was established by the former students of Dr. Fred Basolo in appreciation of his contributions to inorganic chemistry at Northwestern University.

Fred Basolo was born in Coello, Illinois in 1920 and received a B.Ed. at Southern Illinois Normal University. He then went to the University of Illinois where he received a Ph.D. with John C. Bailar, Jr. in 1943. After working on a classified military research project during WWII, he joined the faculty at Northwestern in 1946. In 1980, the University honored him with the Charles E. and Emma H. Morrison Professorship of Chemistry.

Internationally recognized for his original contributions to the syntheses and reaction mechanisms of transition-metal Werner complexes, Basolo did some of the seminal work in the developing fields of organometallic and bioinorganic chemistry. He was also a truly gifted teacher. Many of his former students occupy prominent academic and industrial positions. Basolo influenced students worldwide to study inorganic chemistry and received the 1992 ACS Pimentel Award in Chemical Education. He published 400 scientific publications and four books before his death in 2007.

Basolo's contributions to the profession of chemistry were equally outstanding. He served as President of the American Chemical Society in 1983 and as Chairman of the Chemistry Section of AAAS in 1979. He was a member of the Board of Trustees of the Gordon Research Conferences and its chairman in 1976. Some of the many honors received by Basolo include membership in the National Academy of Sciences, the American Academy of Arts and Sciences, foreign membership in the Italian Academy of Sciences Lincei, as well as the ACS Awards for Research and for Service in Inorganic Chemistry. He received the first Joseph Chatt Medal, the 1996 Willard Gibbs Medal, and was the 2001 Priestley Medalist of the ACS.

Previous Basolo Medalists:

1991	<b>Ralph G. Pearson</b>	University of California, Santa Barbara
1992	<b>Henry Taube</b>	Stanford University
1993	<b>Jack Halpern</b>	University of Chicago
1994	<b>Harry Gray</b>	California Institute of Technology
1995	<b>Lawrence Dahl</b>	University of Wisconsin, Madison
1996	<b>Richard H. Holm</b>	Harvard University
1997	<b>Kenneth N. Raymond</b>	University of California, Berkeley
1998	<b>Malcolm Green</b>	University of Oxford, UK
1999	<b>Thomas J. Meyer</b>	University of North Carolina, Chapel Hill
2000	<b>James P. Collman</b>	Stanford University
2001	<b>M. Frederick Hawthorne</b>	University of California, Los Angeles
2002	<b>Stephen J. Lippard</b>	Massachusetts Institute of Technology
2003	<b>Daryle H. Busch</b>	University of Kansas
2004	<b>Malcolm H. Chisholm</b>	Ohio State University
2005	<b>John E. Bercaw</b>	California Institute of Technology
2006	<b>Ivano Bertini</b>	University of Florence, Italy
2007	<b>Richard R. Schrock</b>	Massachusetts Institute of Technology
2008	<b>Robert H. Grubbs</b>	California Institute of Technology
2009	<b>Peter J. Stang</b>	University of Utah
2010	<b>Roald Hoffmann</b>	Cornell University
2011	<b>Gregory J. Kubas</b>	Los Alamos National Laboratory
2012	<b>Richard Eisenberg</b>	University of Rochester
2013	<b>Marcetta Y. Darensbourg</b>	Texas A & M University
2014	<b>Makoto Fujita</b>	University of Tokyo

## CHICAGO SECTION 2015 ELECTION SLATE

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\* incumbent

# "CHEM SHORTS" For Kids

## Painting with Water

Kids, did you know that October 19-24 is National Chemistry Week? This year's theme is "Chemistry Colors our World" and here is one of their activities. Read to the bottom for a bonus activity for Halloween!

Some artists use the absorbent property of canvas to create interesting shapes and patterns. In this activity, painting with water over marker designs on coffee filters will produce different shapes and artistic butterflies.

### You'll need:

- 2 circular white coffee filters
- 1 pipe cleaner
- Water-based markers
- Scrap paper (not newspaper)
- Paintbrush
- Paper towel
- Cup of rinse water



<http://glitteringmuffins.com/2012/06/14/smallhands-creating-hope-coffee-filter-butterfly/>

1. Place the coffee filters on top of a piece of scrap paper. Use several different color markers to create a design on each coffee filter.
2. Place both coffee filters on another piece of scrap paper.
3. Dip the paintbrush in the water and paint over the designs with the wet brush. Rinse the brush in the water several times while you are painting with the water. Watch how the designs change.
4. Fold the pipe cleaner in half. Hold the pipe cleaner about 2 cm from the fold and twist two times. This will leave a small loop.
5. Scrunch one of the coffee filters along an imaginary line down the middle of the filter to produce one set of the butterfly's wings.
6. Place the filter inside the open ends of the pipe cleaner, centering it close to the twisted end.
7. Repeat Step 5 with the other coffee filter. This is the second set of the butterfly's wings. Place it above the first filter, inside the open ends of the pipe cleaner.
8. Twist the two pieces of the pipe cleaner together about 4 cm from the open end of the pipe cleaner. This will hold the two filters in place.
9. Turn down the ends of the pipe cleaner to look like antennae.

The filter is made of a special type of paper that absorbs water easily. Paper towels are made of a similar type of paper. The colors in the markers dissolve, or are soluble in, water. When the water is painted onto the coffee filter, the colors dissolve in the water. As the paper filter absorbs the water, the dissolved colors move with the water and create the resulting color patterns.

### Reference:

<http://www.acs.org/content/dam/acsorg/education/resources/k-8/science-activities/arttoys/marker-butterflies.pdf>

### BONUS:

Gather a few empty toilet paper rolls. Have an adult partner carefully cut two slits into each roll to look like eyes when the roll is held horizontally. Vary the size and shape of the eyes; scary, spooky eyes are best for Halloween. Wait for nighttime. Activate and place a small differently-colored nightstick into each roll. Place the rolls around your yard and have your friends walk by. Boo!



<http://www.rustandsunshine.com/2012/10/glowing-eyes.html>

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](http://chicagoacs.org/articles.php?article_category=1)

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## CHEMISTRY DAY AT DEPAUL UNIVERSITY ON OCTOBER 17<sup>TH</sup>

The Chicago Section of the American Chemical Society will present the 2015 Chemistry Week program on Saturday, October 17 at the DePaul University campus. The Chemistry Week program is scheduled to begin at 10 am and should conclude around 3 pm. We will be located on the 1st and second floor of McGowan South 1110 W. Belden Ave. The Chemistry Week event is free to all to attend.

The topic this year is "Chemistry Colors our World". There will be: 1) some hands on experiments on color; 2) a number of talks about color and the related chemistry details; 3) a good number of vendors and demonstrators talking about the chemistry of color; 4) and some spectacular demonstrations to end the program. We hope that you can join us!

The DePaul University McGowan South building is located at 1110 W. Belden Ave., Chicago, IL 60614. The main entrance is on Belden Ave. To get to the campus using public transportation take the CTA Brown line or Red line Train to Fullerton Ave., then walk 3 blocks west. By car use Lake Shore drive to the Fullerton exit then proceed west on Fullerton 1.5 miles or The Kennedy expressway to the Fullerton exit and proceed East 1.7 miles on Fullerton. Some street parking should be available or park in the Clifton parking garage located at 2330 N. Clifton or the Sheffield garage located at 2331 N. Sheffield.

This year once again the Chicago section is participating in the ACS Illustrated Poetry contest. The competition is open to K-12th grade with winners in 4 age groups. Entries are due at the section office on October 26th. Winners of the local contest go on to the national competition. Full details and entry forms are available on the community activities Website: [http://chicagoacs.org/content.php?page=Chicago\\_Section\\_Community\\_Activities](http://chicagoacs.org/content.php?page=Chicago_Section_Community_Activities)

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## SOMEONE YOU SHOULD KNOW

Russell W. Johnson is known to all us as Russ. He wears many hats in the Chicago Section. He is an ACS Fellow (class of 2010), one of the ten Chicago Section's Councilors, a director of the Section, chair of the Bylaws Committee, and Public Relations Committee. He is one of our members who have not learned the word 'no' to volunteering but at the same time, he is one of the most dependable and valuable members we have. Russ is an easy going fellow who knows how to bring the best out of people and make peace with everyone. There are not many individuals like that. Russ was born and raised just west of Minneapolis, Minnesota. His father was a sheet metal worker and his mom was a homemaker. He has a brother who is two years younger than him. Of course, growing up in Minnesota meant living in a strong Scandinavian community. While Russ enjoys most Scandinavian food, he is not a fan of Lutefisk which he can immediately recognize as saponified Torsk or Atlantic Cod.

Russ was the first in his family to graduate college and go into science. Russ became interested in science at a very early age. He enjoyed astronomy in the second grade and was hooked after the Russians launched Sputnik and the US launched Explorer I. His interests led to experimenting on small backyard rockets and developing some interesting energetic propellants. Russ spent many hours in the library researching the chemistry to make these propellants which led him in the direction of chemistry instead of astronomy. In high school, Russ built a small particle accelerator as a senior project which earned him a blue ribbon in the Minneapolis and St. Paul area science fair. There was also a full page article and photo in the Minneapolis newspaper, titled "Local Student built an Atom Smasher in Parents Basement". Russ reports that his neighbors were happy when his family moved.

Russ earned his B.S. in chemistry from the University of Minnesota. He joined Jim Bolton's physical chemistry research group his senior year and used ESR to study reactions of titanium salts with t-butyl alcohol. After graduation, Russ went into the Air Force through the ROTC program rather than being drafted into the Army. He started graduate school at the University of Colorado and studied under Professor Ed King (who recently passed away this past August) on ligand substitution reaction kinetics for chromium and rhodium compounds

for his Ph.D. During graduate school, Russ went through ROTC and served three months of active duty followed by 12 years in the reserves.

Russ has worked many jobs from delivering newspapers at 12 to being a mechanic for Sears at 16 and working in a roofing manufacturing plant during college. Currently, he is a Corporate Fellow at Honeywell which is equivalent to a Vice-President on the technical level. Russ's position focuses on science and technology instead of organizational issues. He leads the Aerospace Air Management Council, which develops strategies for providing clean, conditioned cabin air for aircraft and spacecraft cabins, inerting gas for fuel tanks, on-board oxygen and protection from toxic chemical and biological materials. His team is made of an incredibly talented group of scientists and engineers from all over the world. Russ will tell you that he has enjoyed all of his positions and projects over the years but his favorite was building a plant in Russia to demilitarize rocket propellant from ballistic missiles by converting it into chemicals.

Russ became an ACS member 43 years ago. His thesis advisor, Professor King, convinced him to join. Professor King was Chair of the Chemistry Department at the University of Colorado, Editor of Inorganic Chemistry and very active in the ACS which adds up to a great role model. Russ has also been a very active member both locally and nationally. Locally, he has chaired the Section twice and nationally, he has chaired the Communications and Public Relations Committee and now serves on the Committee on Chemistry and Public Affairs. He states that there is not one position that he can characterize as the most fun but rather the enjoyment generated by the people he has worked with.

You can always learn something about an individual by asking who they would want to eat lunch with dead or alive. Russ chose Alexander von Humboldt. His reason was that he noticed his name everywhere (parks, ocean currents, national forest, mountain peaks, a college and a county in California). Russ learned that he was an amazing explorer who used the eclipse of a Jupiter moon to correctly position South America before a clock could be used to determine longitude. He shared a lab with Joseph Louis Gay-Lussac to investigate properties of air and Humboldt's greatest achievement was "Kosmos (Cosmos): A Sketch of a Physical Description of the Universe". It appears that the young man raised in Minnesota, our Russ, continues to chase his dreams of astronomy.

Russ has been married forty-five years

to his lovely bride, Mary, whom he met and married after earning his B.S. They had four children; sadly losing Aaron before his 21st birthday to heart-lung disease. Aaron's twin brother is a fire fighter/paramedic and starting up a construction business. Russ's oldest daughter has a B.S. in chemistry and works in industry and his youngest daughter graduated Ringling School of Art in Florida and is starting a career in illustration and children's writing. Russ enjoys time with his family, long walks with their Golden Retriever, hiking in the mountains, photography, cooking and reading.

Russ's final words of wisdom to all of us are to enjoy life and be "the best you can be." It is important to have some skills in many disciplines such as marketing, management, program management and manufacturing. This is never easy with some difficult assignments along the way, but ultimately, a person can reach their highest potential working in an area that they enjoy.

FRAN KRAVITZ



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## A WEEK IN ONTARIO

The Ontario Ministry of Economic Development, Education, and Infrastructure invited chemistry trade magazine editors from around the world to come to Ontario and see what they have to offer. As editor of the Chemical Bulletin, I was afforded the opportunity to see the kinds of things that are affecting the chemical business and the opportunities in Ontario. So for the next issues I will talk about the things that have made, —and are still making— Ontario a solid chemistry business province. When possible, I will highlight how Illinois and Ontario are similar.

Ontario contains 40% of the population of Canada with the largest city of Ontario being Toronto with 2.6 million residents compared to Chicago's 2.7 million. Its area is 415,000 mi<sup>2</sup> which is between the size of Texas and Alaska or 7x the size of Illinois. Its manufacturing GDP is \$215 billion (\$U.S.) compared to \$101 billion for Illinois. A large portion of the U.S. (52%) GDP is within 10 hours of driving distance from Toronto. 58% of the Ontario population has at least an associate degree compared to 41% in Illinois. The tax rate in Ontario is 25% (15% Federal and 10% province) compared to 36% in Illinois with a 14% R&D tax credit compared to 0% in the U.S.

In the Chemical and Biochemical sectors, Ontario employs 27,000 people, similar to Illinois with a value of shipments of \$16 billion compared to Illinois' \$32 billion. The main regions for the chemical industry are the Sarnia-Lambton, Greater Toronto and the Niagara and Eastern Ontario areas. Ontario is home to a rich and diverse feedstock supply with the close proximity to the Marcellus (PA) and Utica (MI) shale deposits with pipelines directly supplying feedstock to the Sarnia-Lambton and neighboring regions. The pipelines from Alberta and the southern and western U.S. are brought through Chicago on their way to Sarnia. The light petroleum is stored in the Dawn Hub around Sarnia which is 50% larger than the Chicago and Joliet Hubs combined. Similar to Illinois it is home to a variety of biomass feedstock. Ontario harvests 3 million acres (MA) of soybeans, 1.8 MA corn, 0.7 MA winter wheat compared to Illinois' 9.8, 11.8, and 0.7 MA of those crops, respectively. Ontario harvests 5x more wood than Illinois.

While Ontario has 10 universities with chemical engineering programs and 27 universities and colleges with an applied chemistry or chemical production focus, Illinois has significantly more than that. Both have top notch programs in the University of Toronto (17th in the world), McMaster (140th), Waterloo (180th), and Queens University (189th). Illinois is no stranger

to great institutions with Northwestern (16th), University of Chicago (20th), and UIUC (68th). There is a fundamental difference however between their college name and the U.S. Their "colleges" are similar to our community colleges and even more different is that their community colleges are more like a trade school. Lambton College does an outstanding job of training operators and engineers for the chemical industry.

In the following Issues I will talk more about many of the above topics in greater detail.

PAUL BRANDT

## CALENDAR

**October 6:** ACCA Seminar – Dr. Matthew Ginder-Vogel (U of Wisconsin) *Contaminant Transformation and Retention by Environmentally Relevant Minerals* at North Central College at 7pm in Larrance Academic Center, Rm 5.

**October 10 and 17:** Volunteers needed for the Chicago Section ACS Boy Scouts of America Chemistry merit Badge program, noon to 1 p.m. on either Saturday, October 10 at Oakton Community College in Des Plaines and/or Saturday, October 17 at College of Lake County in Grayslake to discuss their chemistry career. Contact Fran Kravitz at [fk1456@sbccglobal.net](mailto:fk1456@sbccglobal.net) if you are available to help.

**October 13:** ACCA Seminar – Dr. Rainer Glaser (U of Missouri) *CO<sub>2</sub> Capture from Air* at North Central College at 7pm in Larrance Academic Center Rm 5.

**October 13-16:** Laboratory Management Conference sponsored by The Association of Laboratory Managers (ALMA), Las Vegas, NV. See details at <http://labmanagers.org/meetinginfo.php>.

**October 16-17:** MACTLAC Annual Meeting at Millikin University. This year's theme is *Green Chemistry's Silver Anniversary: A Look Ahead*. For

more information see details at <http://www.millikin.edu/academics/college-arts-sciences/chemistry-department/get-involved/mactlac-annual-meeting-2015>.

**October 17:** The Chicago Section ACS will hold their Chemistry Week program at Depaul University from 10 a.m. to 3 p.m. in McGowan South, 1110 W. Belden Ave. This year's theme is Chemistry Colors our World.

**October 20:** ACCA Seminar – Dr. Ken Kemner (Argonne National Lab) *An Introduction to Synchrotron Radiation and its Application to Biogeochemistry* at North Central College at 7pm in Larrance Academic Center, Rm 5.

**October 23-24:** Illinois Science Education Conference, Tinley Park Conference Center. For more information, visit <http://www.ista-il.org/#>.

**October 27:** ACCA Seminar – Dr. Ed O'Loughlin (Argonne National Lab) *Cycling of Major/Minor Elements and the Fate and Transport of Contaminants in Natural Systems* at North Central College at 7pm in Larrance Academic Center, Rm 5.

**October 30:** Chicago Section ACS Joint Dinner Meeting with the Northwestern University Department of Chemistry. This is the Basolo Medal Award Lecture, Dinner, and Presentation. The lecture and dinner will be at Northwestern University. **See details in this issue.**

**November 3:** ACCA Seminar – Dr. Kerri Pratt (U of Michigan) *Chemical Interactions between Atmospheric Trace Gases, Particles, Clouds and Snow* at North Central College at 7pm in Larrance Academic Center, Rm 5.

**November 10:** ACCA Seminar – Dr. Elisabeth Moyer (U of Chicago) *Atmospheric Science: Global Warming* at North Central College at 7pm in Larrance Academic Center, Rm 5.



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