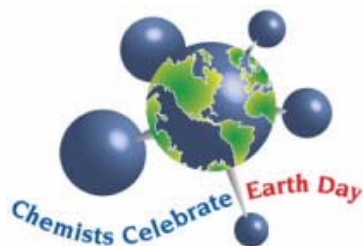


American Chemical Society – Kalamazoo Local Section Newsletter

April 30, 2012

Vol. 2 - Issue 3



Earth Day 2012

"Many nations. One planet. Our home."

"Our Earth. Our Choice. Still hope".

"I see lawns as potential gardens."

"Inspire change. If not you, who?"

"Remember 3 R's... Reduce, Reuse, Recycle."

2012 KACS Executive Officers

Chairperson

Dr. Elke Schoffers, WMU – Chemistry
elke.schoffers@wmich.edu

Past-Chairperson

Dr. Doug Williams, Kalsec, Inc.
DWilliams@kalsec.com

Chairperson-Elect

Vacant
Consider getting involved

Secretary

Carolyn Pugh, Bridge Organics
carolyn.a.pugh@bridgeorganics.com

Treasurer

Dr. John Miller, WMU – Chemistry
john.b.miller@wmich.edu

Councilor

Dr. Lydia E. M. Hines, WMU – Chemistry
lemhwgh@gmail.com

Alternate Councilor

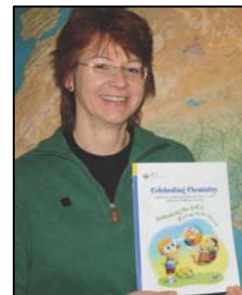
Mr. Michael Kiella
mike.kiella@charter.net

Comments from the Chair

Elke Schoffers

Dear Colleagues,

Above are listed some of the entries for the "six-words for the planet" essay competition held by the Environmental Protection Agency (EPA) in collaboration with SMITH Magazine. The last quote was embraced by the ACS this year under the motto "Rethinking the 3 R's – It's Easy to be Green". It was outlined in its newest edition of "Celebrating Chemistry".



Elke Schoffers, Ph.D.
KACS Chair

(Continued on Page 2)

KACS website:

<http://www.wmich.edu/acs/>

Do you have questions, comments, or would like to contribute to this newsletter? Send an email to:

ACSkzoo@gmail.com

Upcoming events at a glance (May 2012)

KACS

Tuesday, May 1, 2012

KACS High School Science
Symposium

9 AM - 1 PM, Chem Bldg, WMU

Contact

donald.schreiber@wmich.edu for
details

Wednesday, May 9, 2012

KACS Executive Committee
Meeting.

Submit new agenda items to

elke.schoffers@wmich.edu

Monday, May 21, 2012

KACS Awards Reception

6-8 PM, Chem Bldg, WMU.

Outstanding high school students
who became finalists of the
Competitive Scholarship Exams will
be recognized during this event. In
addition, KACS will announce
awards for outstanding high school
teachers, chemistry college
students and long-term ACS
members.

Feel free to contact KACS at
Elke.Schoffers@wmich.edu if you
would like to announce specific
events or share links.

Comments from the Chair

(Continued from Page 1)

This ACS outreach effort is on point given that the United States lags far behind other nations with respect to sustainability and environmental stewardship. Yearly, Americans generate 250 M tons of waste, which is buried, burned, or recycled. The transport of garbage (often across state lines) is a \$70 B industry. Recycling is at ca 34 % in the US today, compared to less than 10% in 1980. Despite a positive trend over 40 years, the US could do much better. In Japan only 16% of waste is sent to landfills versus 70% in the US. There is much room for improvement. For example, the economic value of recycled glass is destroyed because of comingling of all colors during curbside pickup. In comparison, Germany began separating different-colored glass in the 1980's. Japan made significant progress after passing relevant environmental laws and by educating its citizenry, especially children. However, it must also be noted that everybody would benefit from the development of more sustainable materials and their application worldwide.

Please read on about additional Earth Day-related topics and upcoming events in your Kalamazoo Local Section.

Best regards,

Elke Schoffers, Ph.D.

Professor (WMU)

Chair - Kalamazoo Section (ACS)



(Photo by Elke Schoffers)

Celebrating Earth Day at the Kalamazoo
Nature Center.

Kalamazoo Section Annual Awards Program

Don Schreiber

The Kalamazoo Section of the ACS will hold its fortieth Annual Awards Program on Monday, May 21, 2012, in the New Chemistry Building on the Western Michigan University Campus from 6:00 to 8:00 PM. The awards ceremony is held annually to honor outstanding high school senior chemistry students and high school teachers. This year the ceremony will start at 6:45, preceded by a free reception.

The program will include the honoring of the Outstanding High School Chemistry seniors from the 35 high schools in the area served by the Kalamazoo section. The section will also present checks and certificates to the winners in the Kalamazoo Section's Competitive Examination program. Outstanding College Chemistry Seniors from Kalamazoo College and Western Michigan University will also be acknowledged.

An award will be given to the Outstanding High School Chemistry Teacher for 2012 from the Kalamazoo Section area schools. This year we will be accepting nominations for the award from the KACS membership, so if you want to nominate your child's High School Chemistry Teacher, please contact, Dr. Don Schreiber at 269-387-2856 or by email at donald.schreiber@wmich.edu.

Also to be honored at the banquet will be Fifty- and Sixty-Year ACS members and a special Kalamazoo Section Achievement award will be presented.

There is no cost for the reception, however we ask that any Kalamazoo Section member or guest who wishes to attend please RSVP by May 14, 2012 and return the following information by mail, email (robin.k.lenkart@wmich.edu) or by phone (269) 387-2846.

PLEASE RETURN by May 14, 2012 to:

Ms. Robin Lenkart
Chemistry Department
Western Michigan University
Kalamazoo, MI 49008

RSVP Slip

<u>Name</u>	<u>Address</u>	<u>Places</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Total Attending	_____

Announcements

Call for Section Member Award Nominee

Lydia Hines

Each year at our Section's Award Ceremony - where we recognize our 50 and our 50+ year members, our outstanding High School chemistry students, a High School chemistry teacher and two outstanding College students - we also recognize at least one member of our Local Section who has **served selflessly over an extended period of time**. We have awarded this recognition to 29 volunteers over 22 years.

If you would like to recommend (a) Section member(s) for recognition, please send a note giving the **name(s)** and the **rationale for the nomination(s)** to the chair of the Awards Committee, Lydia Hines, at lemhwgh@gmail.com by **May 5**. Thank you.

Call for volunteers for the 2015 Joint Great Lakes-Central Regional Meeting in Grand Rapids

Lydia Hines

The Kalamazoo Section is located in the Great Lakes Region (GLR) for the purposes of Regional Meeting (RM) participation. At the last RM, which was held jointly with the Midwest Region in St. Louis, MO, the GLR Board decided to organize a RM for the benefit of our membership every other year, in odd-numbered years; in 2013 the GLRM will be held in Wisconsin and will be hosted by the LaCrosse-Winona Section. The 2015 RM will be held in Grand Rapids as a Joint Meeting with the Central Region's West Michigan Section. Needless to say, any meeting takes planning, so we are extending an open invitation for KACS members to **volunteer** to help in the organization of the 2015 Joint Great Lakes-Central Regional Meeting (JGLCRM). The **immediate need** is to identify a **General Co-chair** and a **Program Co-Chair** for that meeting. At this time the General Co-chair from the Central Region is Mark Thomson of Ferris State University. For more details on the responsibilities entailed in the volunteering positions for which we are sending a plea you may contact Lydia Hines (269-375-7349, lemhwgh@gmail.com) or Donald Schreiber (donald.schreiber@wmich.edu) or John Miller (john.b.miller@wmich.edu) as we have been involved in the planning of past Joint RMs.

Miscellaneous Announcements

ACS Strategic Plan

Lydia Hines

After extensive input from the membership, the ACS has adopted the following Strategic Plan for 2012 and beyond:

- With the **VISION** of Improving people's lives through the transforming power of Chemistry.
- And a **MISSION** to Advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.

The following four **GOALS** have been set forth:

- Goal 1: Be the most authoritative, comprehensive, and indispensable provider of chemistry-related information
- Goal 2: Empower an inclusive community of members with networks, opportunities, resources, and skills to thrive in the global economy
- Goal 3: Foster the development of the most innovative, relevant, and effective chemistry education in the world
- Goal 4: Communicate chemistry's vital role in addressing the world's challenges to the public and policymakers.

A more detailed description of the implementation of these goals may be found at www.acs.org/strategicplan

Expired or Unwanted Medicine – Free Disposal

David Bolliet

Please remember that if you have any unwanted or expired medicines, Kalamazoo County has initiated a Permanent Medication Disposal System. Do you have unwanted medicines?

Bring your expired or unneeded prescriptions and drop them off at any of these locations. You don't even need an appointment! Drop offs are free and completely anonymous:

- Kalamazoo Township Police Department (Riverview Dr.)
- Kalamazoo Department of Public Safety (Crosstown Pkwy.)
- Portage Police Department (Shaver Rd.)
- Kalamazoo Sheriff's Office (Lamont St.)

For more information, please visit www.redmedbox.com

Chemists Celebrate Earth Day - Report

Lydia Hines with pictures by Elke Schoffers

Our Chemists Celebrate Earth Day (CCED) celebration plans this year began in early March when students (Grades K-12) in our Local Section area were invited through their teachers to submit Illustrated Poems on the theme "Recycling: It's Easy to be Green". For the first time ever we received a response from **five schools** and 3 grade levels (3-5; 6-8; 9-12). One winning entry from each grade level was selected and sent on to the National competition (results will be posted on the ACS website shortly).

On April 21 we once again cooperated with the Kalamazoo Nature Center (KNC) as host for our outreach during their Earth Day event - another first was the participation from Kalamazoo College (Josh Abbott, Lynza Halberstadt, Margarite Matossian, Agust Olafsson, Caity VanGelderren), Western Michigan University (Brianna Hyder) and Kalamazoo Valley Community College (Kim Greve) who along with Lydia Hines, our Section's CCED coordinator, spent a gorgeous day handing out materials related to this year's CCED theme - "**Rethinking Recycling: It's Easy to be Green**" - and sharing the fun and applications of chemistry with visitors of a large age range.

We talked about "Green Parenting", Recycling codes, talked about "Magic Sand" properties, as well as polymers and the use of super-absorbent polymer in diapers, and made Silly Putty with about 150 young children – the accompanying parents liked it, too ♫. In all our conversations we emphasized chemists' positive contributions to our environment. Though we did not see as many classroom teachers as in prior years several home-schooling families came by and were thankful to know about KACS' outreach efforts



Pictured, left to right: Kim Greve Josh Abbott, Brianna Hyder, Margarite Matossian, Lydia Hines.



Josh Abbott (right) helps out with making a polymer.

A Special Earth Day Report

Elke Schoffers

ACS has recognized Earth Day since its inception on April 22, 1970. Thus, 2012 marks the 42nd year of ACS involvement. This April also marks the second anniversary of the Deepwater Horizon oilrig explosion. The Gulf of Mexico was polluted with 200 million gallons of oil and 2 million gallons of chemical dispersants over 3 months. Many animals immediately perished from the oil slick. Now, the long-term effects are becoming more evident. An increasing number of deformities have been observed in sea life like shrimps and crabs. The 2010 accident occurred while drilling at 5000 feet. A related spill in the Gulf occurred at 200 feet depth in 1979. While research has led to ever increasing drilling depth for oil exploration, the response to oil pollution has not progressed in over 30 years. The clean up and containment technology was the same for both accidents: dispersants, booms and skimmers.



(Photo: Wikipedia)

The year 2012 also marks the 50th publication anniversary of the best seller “Silent Spring” by Rachel Carson. While completing her degree in English she enrolled in a biology class to fulfill her general education requirement. Her interest in science expanded. Carson eventually became a biologist in the U.S. Bureau of Fisheries and a full-time nature writer. Her research into the use of synthetic pesticides is summarized in “Silent Spring”. It documents numerous examples of adverse effects on the environment and wildlife. Carson’s work is credited with launching the environmental movement in the US. Her staunchest critics decry her as a mass murderer because she advocated for a more responsible use of pesticides like DDT. DDT was effective for controlling malaria in selected climates before insects became resistant. Meanwhile, indiscriminate spraying became a threat to wildlife, especially birds. DDT was banned in the U.S. in 1972. Bird populations rebounded, including the bald eagle.

Any pesticide is meant to kill a pest. That includes so-called “organic pesticides”. Pesticides can be harmful to the environment and have unintended consequences. For example, the barn owl shown here suffered neurological damage. Blood work indicated that it was exposed to rat poison after eating a mouse. It can no longer catch live prey and is housed by the Michigan Raptor Center for educational purposes.



(Photo by Elke Schoffers)

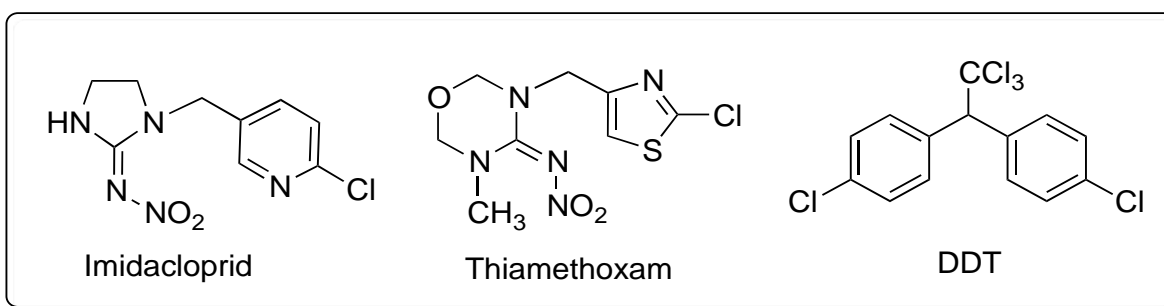
Rescued barn owl.

(Continued on Page 8)

A Special Earth Day Report

(Continued from Page 7)

Compared to commercial growers, American residential homes use a disproportionately high amount of pesticides for their front and backyards. The chemicals are often applied to maintain monocultures like large lawn areas. Lawns offer little support for wildlife. In contrast, integration of native flowers and shrubs supports beneficial insects like bees and butterflies. Pollinators (mostly insects) play a pivotal role. They are needed by 85% of all plants and responsible for 35% of crop production worldwide. Many flowers and shrubs can help pollinators. However, the indiscriminate and excessive use of pesticides will still adversely affect wildlife. Gardeners can use alternative methods (traps, physical methods) or make small adjustments. For example, pesticide applications at the end of the day are less harmful because insects forage predominantly in the morning and midday.



Imidacloprid and thiamethoxam are commonly used pesticides; DDT is banned in most countries.

1



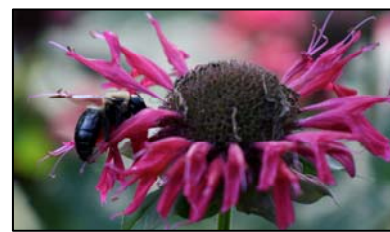
2



3



4



1. A Monarch butterfly that emerged from a chrysalis. 2. A Swallowtail butterfly on a butterfly bush. 3. A hummingbird on a Monarda flower. 4. A Mason bee on a Monarda flower. (Photos by Elke Schoffers, taken in her Kalamazoo garden)

Spring came early to Michigan this year because of unusually high temperatures in March. Bees play a pivotal role in pollinating fruit trees during the spring season. Regretfully, bee populations have plummeted for several years now due to Colony Collapse Disorder (CCD). Scientists suspect a variety of causes (fungal infections, viruses, insecticides, unbalanced diet). Two recent *Science* articles have described how neonicotinoid pesticides like imidacloprid and thiamethoxam interfere with the bees foraging and homing abilities.

(Continued on Page 9)

A Special Earth Day Report

(Continued from Page 8)

To conclude my remarks, I would like to describe the work by Professor Robert Bergman at Berkeley. His career at the University of California has always included a lively mix of teaching, research and public service.* A few years ago, California approved the agricultural use of methyl iodide (CH_3I), a powerful electrophile and cancer suspect agent. For years, Bergman, approximately 50 colleagues from the National Academy of Science and many other chemists have raised concerns about its toxicity. At last, the controversial fumigant has been pulled from the U.S. market.

The environment continues to face many challenges. These challenges can also offer new opportunities for chemists that are aligned with the current ACS Strategic Plan: a vision of improving people's lives through the transforming power of chemistry and a mission to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.

Chemists can play an important role in the development of more environmentally benign chemicals and practices. Chemists can play an important role in educating the public about sensible applications of chemicals. Chemists can be important consultants to policy makers. Lastly, chemists can be important advocates.

Thank you for reading!

*Professor Robert Bergman has made seminal research contributions to the field of inorganic and organometallic chemistry. A lesser-known fact is that Bergman is an excellent ballroom dancer.

(Any comments included in this summary reflect the views of the author and are not part of an official statement of the ACS.)