

Newsletter for the Kalamazoo Local Section
of the

Jan 18, 2017

American Chemical Society

Vol. 7 – Issue 1

75th Anniversary Celebration Issue

2017 KACS Executive Officers

Chairperson

Steve Secrest

stevesecrest37@yahoo.com

Past-Chairperson

Dr. Brian Eklov

chair@kalamazooacs.org

Chairperson-Elect

Vacant

Secretary

Angela Willson,

angelamwillson@gmail.com

Treasurer

Dr. Andre Venter

andre.venter@wmich.edu

Councilor

Dr. Lydia E. M. Hines

lemhwgh@gmail.com

Alternate Councilor

Dr. Doug Williams, Kalsec, Inc.

dwilliams@kalsec.com

75th Anniversary Party

Thursday February 23, 2017

6:00 – 9:30 pm

Air Zoo

6151 Portage Road

Portage MI 49002

www.airzoo.org



It's just around the corner...

Our KACS 75th anniversary party!

Time is getting close for our KACS 75th anniversary gala celebration on the main floor of the Air Zoo (6151 Portage Road) on the evening of Thursday, February 23, 2017, from 6-9:30 pm.

There will be time to socialize, reminisce, celebrate our accomplishments, enjoy dinner, and be treated to a presentation on the SR-71. The Executive Director of the ACS will join our celebration, and we will have access to four of the Air Zoo's event experiences (including the simulators and the 4-D theater) for those who would like to take advantage of them!

We look forward to seeing you at this family-friendly event. The cost for the buffet dinner for each attendee age 12 years and older will be \$10.00 (young people under 12 may come at no cost) so please plan to join fellow KACS members and friends that evening for this special party! See you there!



SR-71 Blackbird Presentation at the 75th Anniversary Party!



Long time Air Zoo docent John Boase will provide a special presentation on the SR-71 Blackbird

Some interesting facts about the SR-71:

- Flew from 1964-1991, only 32 aircraft were manufactured
- Holds the record for fastest flight at 2193.13 mph, recorded in July 1976
- The mostly titanium body leaked fuel through expansion joints that sealed once the plane heated up due to air friction
- The SR-71's JP-7 fuel had such a low flash point that an initiator (triethylborane) had to be ignited first to then ignite the fuel
- The SR71's "R2-D2" navigation system main sensor could detect >60 stars in broad daylight
- The SR-71's advanced camera could, while flying at 2000 mph at 80000 feet, photograph a moving car clearly enough to read the license plate

Top Ten Reasons to Attend the 75th Anniversary Party!

10. By Feb 23 we will all be ready for a party night out to help break up mid-winter cabin fever.

9. Tickets only cost \$10 per person, with all ticket sale proceeds going to help defray the cost of the event.

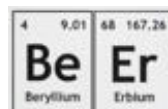
8. The Air Zoo is a very cool event venue, and we will have access to the static aircraft displays and 4 of the attractions, including the simulators.

7. This is an opportunity to meet ACS Executives and share your thoughts with them.

6. This is an opportunity to see and learn about the fastest aircraft in the world: the SR-71 Blackbird.

5. A very good buffet dinner is being catered by AV Catering, feature a vegetarian and a non-vegetarian entrée.

4. A cash bar will be available featuring:



3. As a special memento commemorating 75 years, the first 100 registrants will receive a limited edition KACS 75th pint glass.

2. It's not often that we get invited to a 75th birthday party (and don't have to bring a gift).

1. This is a most excellent opportunity to socialize and hang out with chemistry friends, colleagues and family, and celebrate the first 75 years of the ACS Kalamazoo Local Section.



Interesting Facts Regarding KACS's 75 year History

- The KACS Meritorious Service Award has been awarded 36 times since 1989.
- Two KACS members celebrated their 60th membership anniversary in 2016 – David G. Martin and Howard A. Whaley, and one member in 2015 - Thomas Houser
- NASA connection – KACS presented a Salute to Excellence Award to Astronaut Jack Lousma in 2003
- In 2013 KACS taught Kalamazoo how to do the Cupid Shuffle
- In 2014 KACS was awarded not one, but two ACS ChemLuminary Awards
- 2017 will be the 36th year that the KACS Education Committee has sponsored an annual competitive exam program for area high school students
- The KACS local section covers Kalamazoo, Van Buren and Allegan counties, and is part of the ACS Great Lakes Region
- A major part of KACS are the WMU Chemistry Club, the Kalamazoo College Chemistry Club and the WMU Chemistry Graduate Student Association
- In 1956 the KACS local section annual dues were \$2, and in 2017 are only \$8
- The first KACS newsletter was issued in 1956, in 1980 the newsletter was named The Kalchemist News

Notes of Congratulations on our 75th Anniversary

Happy Anniversary to the Kalamazoo Section! You deserve tremendous thanks and gratitude for your devotion to your passionate members, your community and our science over the past 75 years. I have no doubt that the next 75 years will be filled with even more events, outreach, and education that strengthen the Society and demonstrate the transforming power of chemistry.

Allison Campbell
2017 President
American Chemical Society

On behalf of Kalamazoo College, congratulations to the Kalamazoo ACS Chapter on 75 years of good chemistry! We at K are particularly appreciative of the "good chemistry" that exists between the local chapter, our chemistry department, and our ACS student group. Together, they have applied that "good chemistry" in community outreach and in engagement, professional development and networking with local scientists who practice chemistry in industry, government and education. That "good chemistry" has launched many careers and helps sustain one of the finest undergraduate chemistry programs in the country...right here in Kalamazoo. Thank you, Kalamazoo ACS, for your commitment to the love, the sharing, the explication and the importance of chemistry in Kalamazoo.

Jorge G. Gonzalez
President
Kalamazoo College

Ticket Purchase Information

We will not be allowed to sell tickets at the door, so tickets need to be ordered in advance.

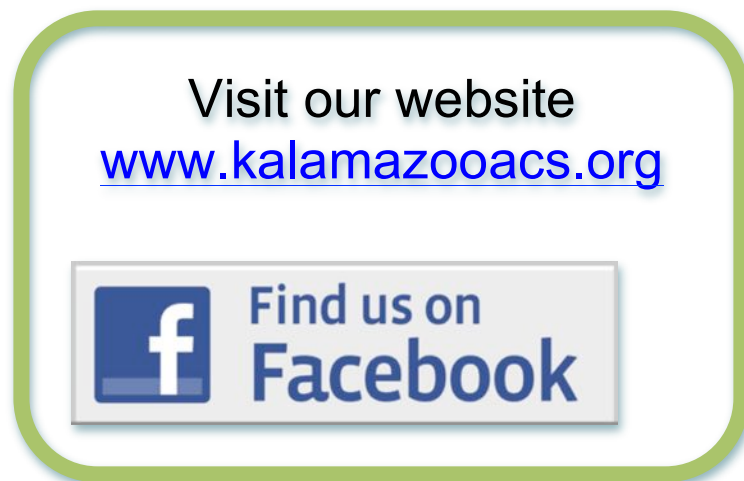
Thanks to heroic efforts by Andre Venter and Mark Wolf, we have two mechanisms for ordering tickets.

Go to our website: www.kalamazooacs.org, under events find the 75th Anniversary Celebration, and look in the blue box.

From there we have two options:

1. Use the PayPal link to select the number of adult tickets, and click on “Buy Now”. If you go this convenient route for ordering tickets, and are bringing kids (free of charge), a follow-up email to chair@kalamazooacs.org letting us how many kids would be very helpful.
2. Select “or download the registration form”, and per the instructions on the form, mail it in filled out with a check. (The form can also be found on page 8 of this newsletter).

We need to confirm our headcount with the caterer by 7 Feb. so don't procrastinate, order tickets now!



75th Anniversary Celebration

REGISTRATION FORM

Please make checks payable to Kalamazoo ACS.

Mail payment and completed form to:

Dr. Andre Venter, KACS Treasurer

Department of Chemistry

Western Michigan University

Kalamazoo, MI 49008-5413

Your Name: _____

Email: _____

Phone number: _____

Number of attendees age 12 and over (\$10 each) = \$ _____

Number of attendees under age 12 (free) _____

Newsletter for the Kalamazoo Local Section of the American Chemical Society

Feb 13, 2017

Vol. 7 – Issue 2

2017 KACS Executive Officers

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brian@eklov.org

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*seeking new treasurer to
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dwilliams@kalsec.com

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Chair's Comments

Happy 75th anniversary KACS! Taking a minute to reflect on that accomplishment really brings home the realization of just how special is this group of chemists. Since 1942 this relatively small ACS section has established a strong, successful tradition of local industrial and academic, scientists and students, working together to share our knowledge and love of chemistry within Kalamazoo and beyond. Being a member of this organization is truly something of which to be proud.

I am grateful for the opportunity to chair our local section. The ACS played a key role in the start of my 32 year career as a pharmaceutical scientist. In 1984 as a graduating student member, I attended the ACS national meeting in St. Louis, and via the Employment Clearing House landed a position in Monsanto's new Bioprocess Development Group. Kalamazoo has also played a key role in my career. Since going to work for Upjohn here in 1988, and working through the Pharmacia – Pfizer – Zoetis changes, I've come to know Kalamazoo as an excellent community in which to live. Chairing our local section brings together an opportunity to connect and contribute to these two important pieces for me, Kalamazoo and the ACS, so thanks for that.

Working with our local section's outstanding and committed membership and Executive Committee (who have already helped me immensely learn the chairing ropes), I look forward to continuing our already established, highly regarded activities - the poster and speaker sessions, Earth Day and National Chemistry Week events, Project SEED and more. In addition, I'll be looking for additional opportunities to strengthen and grow our local section. This is where all local section members can help. Please share with me and the Executive Committee any thoughts or ideas on what we can do to help our local section continue flourishing.



Steve Secrest, Chair

Registration ends soon for our KACS 75th anniversary party!

Thursday February 23, 2017

6:00 – 9:30 pm

Air Zoo

6151 Portage Road

Portage MI 49002

Have you registered yet for this special dinner and social event?

Register via PayPal on our website: www.kalamazooacs.org

We will have access to four of the Air Zoo's event experiences as well as be treated to a presentation on the SR-71. We look forward to seeing you at this family-friendly event. The cost for the buffet dinner for each attendee age 12 years and older will be \$10.00 (children under 12 are free).

Please plan to join fellow KACS members and friends that evening for this special party! We look forward to seeing you there!



Great Lakes Region updates

The KACS local section is a member of the Great Lakes Region. Please visit the region's new website to learn about our region.

<http://greatlakesregionacs.sites.acs.org>

At the new website you will find:

- Information regarding the 2017 Great Lakes Regional Meeting in Fargo, North Dakota June 27-30
- Abstract submission directions for the GLR meeting (deadline of April 24)
- Details on four awards to be given at that GLR meeting
- Nomination requests for worthy award recipients



Thank-you!

On October 20, 2016 the PTO at Lake Center Elementary in Portage hosted their first evening of Science Technology Engineering and Math learning for their students and their families, in an I <3 STEM event at that school. As we summarized in the Nov 2016 KACS newsletter, our KACS local section helped with the event via cash, materials, and volunteer donations.

Below is a thank-you note and photo collage from the Lake Center Elementary PTO. We hope this is the beginning of a long and productive partnership.



Project Seed



Project SEED opportunity: Project SEED was established by the American Chemical Society (ACS) in 1968 to provide economically disadvantaged high school students the opportunity to conduct hands-on research for 8 to 10 weeks in the summer. Selected students receive a fellowship award and will be eligible to apply for a SEED college scholarship.

This year the Kalamazoo ACS (KACS) is looking to fill two Project SEED positions. To qualify a student must have completed his or her sophomore year in good academic standing, have taken at least one course in chemistry, and be recommended by their chemistry teacher or other school official. Students are selected based on their qualifications and letters of recommendation. High school chemistry teachers should have received a letter detailing the project and nominating process.

**Do you need Project SEED information?
Please contact**

Doug Williams dwilliams@kalsec.com
Mike Walsh mwalsh@kzoo.edu

High School Examinations

For the thirty-sixth consecutive year, the KACS is sponsoring a chemistry examination competition for all high school students in Allegan, Kalamazoo, and Van Buren counties. The competition consists of a preliminary and final examination. This year the preliminary examination will take place on March 15 at all high schools that register. High scorers will be invited to the final examination on April 22 at Western Michigan University where they will compete for twenty scholarships. If you would like more information, contact a high school chemistry teacher or email the KACS test coordinators.



**Need more information?
Please contact:**

James Kiddle james.kiddle@wmich.edu
Mike Walsh mwalsh@kzoo.edu

WANTED: Outstanding High School Teachers!

The Kalamazoo Section of the American Chemical Society annually honors an Outstanding High School Chemistry Teacher at its spring award reception. This year we are asking for your cooperation in identifying qualified candidates. The applicant for Outstanding High School Chemistry Teacher should also be able to impart to students a strong understanding of basic chemical principles while inspiring students to choose a career in chemistry. The ideal applicant would use innovative teaching methods and be active in keeping current with the field of chemistry.

To nominate a candidate please contact:

Mike Walsh mwalsh@kzoo.edu

Visit our website

www.kalamazooacs.org



Find us on
Facebook

Do you have questions, comments, or would like to contribute to this newsletter?
Send an email to Christine Pruis, Communication Chair at ACSkzoo@gmail.com

Newsletter for the Kalamazoo Local Section of the American Chemical Society

March 22, 2017

Vol. 7 – Issue 3

2017 KACS Executive Officers

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brian@eklov.org

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Chair's Comments



Steve Secrest, Chair

“The last bastion of inertness has finally fallen.” Did you see this C&EN article (vol 95, issue 7) in early February? A research team from Skolkovo Institute and Nankai University got helium to react with sodium under pressure to make a stable form of Na_2He . Turns out that even helium is active when it comes to chemistry. We can learn something from that.

I fully agree with comments received from a number of local section members during and after our recently successful 75th anniversary celebration that we would like to see more events like this occur. That can happen if we overcome inertness and get more involved in the local section. Okay, it's not really fair to say that we tend to be inert, but that was a good link to the helium article.

We are all very busy with families, work, school and life, and finding time to volunteer with local section activities is not easy or our highest priority. With even a little more member involvement though, we could do more fun and educational chemistry-related events here in our local area.

Some of us were talking recently about our favorite chemistry demonstrations that we've done at various local schools. This got me thinking; it could be cool to form a team of us to go to local schools with a chem demonstration program. Having a team do this means that we would each only have to do one demonstration (our favorite), but we'd have a multi-demonstration program. Could call this group The Traveling Kalchemists, or something like that. Let me know please, if this sounds like something of interest, and let's discuss it some more.

If that sounds like too much, how about volunteering for our upcoming Chemists Celebrate Earth Day? This is a one-day deal (22 April) and we need volunteers to work exhibit tables, with materials and information provided. Working with the kids that come to this event leaves one with a feeling of satisfaction that is rare.

Miss having recurring full-membership meetings with speakers? I do, and I think that if a few people are willing to step up and help me with that, we can get them going again.

Also of great interest to me continues to be finding someone willing to step up and take on the 2017 Chair-Elect / 2018 Chair position.

We have with the outstanding group of chemists in our area, the potential for making KACS an even more vibrant and active organization heading into our next 75 years. We as members just need to donate some of our time and talent to make that reaction go. Please let me or any Executive Committee member know if you can help.

Thanks,
Steve

Chemists Celebrate Earth Day

TWO EVENTS!

WEEK ONE

Saturday, April 15

11 am – 3 pm

Celery Flats
7335 Garden Lane
Portage, MI 49002

WEEK TWO

Saturday, April 22

9 am – 4 pm

Kalamazoo Nature Center
7000 N. Westnedge Ave
Kalamazoo, MI 49009



The theme for Chemists Celebrate Earth Day (CCED) this year is “Chemistry Helps Feed the World”. We have scheduled 2 outreach events in April: The first one will be at the Celery Flats in Portage on Saturday, April 15, from 11 am to 3 pm during their Earth Day activities, and the second will be at the Kalamazoo Nature Center on Saturday, April 22 (9 am – 4 pm) during their Earth Day celebration (with free admission to the Nature Center grounds); at both venues there will be age-appropriate information and hands-on activities for the patrons.

Though the WMU Chem Club members have agreed to present at these two outreach opportunities, that should not preclude KACS member participation on one or both of these days and venues. Patrons are always eager to learn new things about chemistry and to receive materials which they can take home for their further exploration with family, scout leaders and teachers – ACS is very generous in its provision of materials.

Lydia Hines is the Section’s CCED coordinator again this year and you may contact her (lemhwgh@gmail.com) if you would like to join the fun.

Great Lakes Region Meeting

The KACS local section is a member of the Great Lakes Region. Please visit the region's new website to learn about our region.

<http://greatlakesregionacs.sites.acs.org>

At the new website you will find:

- Information regarding the 2017 Great Lakes Regional Meeting in Fargo, North Dakota June 27-30
- Abstract submission directions for the GLR meeting (deadline of April 24)
- Details on four awards to be given at that GLR meeting
- Nomination requests for worthy award recipients



Report

KACS' 75th Anniversary Celebration

Our Michigan winter held off for several days in the last week of February so our celebration on the 23rd of that month was a less harrowing experience than it could have been; it was a fantastic one!



“The group enjoying the meal at the Air Zoo”

The venue was the Kalamazoo Air Zoo where we had a delightful dinner catered by AV Catering, complete with the chef wearing an apron we gave him that said “Get Cooking with Chemistry”; we sat at tables in the shadow of the Zoo’s SR71B; we had four of the Air Zoo “rides” available to attendees of all ages (there were about 100 adult members and friends, and 39 children who attended); there was a buzz of conversation and great camaraderie. The program was streamlined so as not to be excessively long: cutting of the celebratory cake from Amy’s Cakes was followed by a lecture on the SR71B, the fastest airplane ever built, by Mr, John Boase, a docent at the Air Zoo, recognition of the 10 past chairs of the section who were present, recognition of members with 50- 60- and 70- years of membership in the ACS, ending with a

very informative presentation on the ACS and its current emphases by its Executive Director and CEO, Dr. Thomas Connelly. Though none of the three members of our Section with 70+ continuous years of ACS membership (Dr. Fred Kagan, 71 years, Dr. Harold Hart, 75 years, and Dr. Donald Iffland, 75 years) was able to attend, Dr. Connelly personally visited Dr. Iffland before arriving at our celebration to help with the set-up! The one 61-year member present, along with his wife, was Dr. Howard Whaley.

A celebration such as this does not just “happen” - many of our current section members participated in its successful execution; special thanks go to James Kiddle and Sarut Jianrattanasawatt for arranging for the meal and the cakes; to Steve Secreast for supplying the continuously-running background power-point chemistry- and Section trivia-quiz and historical photos, the 7-foot banner with our logo and the pint glasses engraved with our logo, available to the first 100 registrants; to Andre Venter for keeping track of the reservations; to Mark Wolf for helping to set up the PayPal account for the event; to Christine Pruis for sending out our newsletters and other timely information; to Elke Schoffers for soliciting funds for the event and being the photographer; and to Brian Eklov and Lydia Hines for gathering archival information.

We look forward to our 100th anniversary and the years leading up to that!



“Current Executive Committee ready to cut the celebratory cake.”

L to R: Doug Williams, Lydia Hines, Brian Eklov, Stephen Secreast, Angela Willson-Conrad, Andre Venter (The sashes say “I am a Chemistry Ambassador”)



“Past KACS Chairs in attendance”

L to R: Jed Fisher, Doug Williams, Don Schreiber, Lydia Hines, John Stodola, Brian Eklov, John Engelmann, Elke Schoffers, John Greenfield.
Present but not pictured, James Kiddle



“ Mr, John Boase, a docent at the Air Zoo, gives a lecture on the SR71B, the fastest airplane ever built”



“Dr. Tom Connelly, ACS Executive Director, speaks on ACS vision and accomplishments”



“The delicious celebratory cake made by Amy’s Cakes.”

Save the Date!

Annual KACS Awards Program

Monday May 8, 2017
6:30 – 8:00 pm
Chemistry Building Lobby
Western Michigan University



The annual Awards Program of the KACS will be held Monday, May 8, 2017 in the lobby of the Chemistry Building at Western Michigan University (WMU). The presentation of awards will follow a light reception.

Among the over 50 awards to be given that evening will be:

- Outstanding College Chemistry Student from WMU
- Outstanding College Chemistry Student from Kalamazoo College
- Outstanding High School Chemistry Teacher
- Outstanding High School Chemistry Students
- Competitive Exam Scholarship Awards

March for Science in Kalamazoo

Saturday April 22, 2017
Location and time still to be determined

It's looking that Kalamazoo will have a local satellite version of the March For Science, being planned for 22 April. ACS has issued statements in support of the March (see the blue box link on the ACS website or follow the link below). KACS is looking into options for local section participation in the Kalamazoo March. Additional information will be relayed as planning progresses and more details become available.



Click [here](#) to read ACS' March for Science Press Release

Being Ambassadors for Chemistry Makes a Difference!

by Lydia Hines

As was shared in the February newsletter, our participation at Lake Center Elementary School's first-ever science night (STEM night) was greatly appreciated. In a more recent communication from the school, the principal expressed vividly that the interest generated that evening has grown, so she extended an invitation to all members of our section to a March 23 (6:30 – 8:00 pm) celebration of the children's continued enthusiasm for science; there they will be showcasing their science-related achievements - some completed and others still in progress - since that well-attended event on October 20, 2016. Our Section "ambassadors" to that event were the WMU Chem Club & Lydia. Hines.

Visit our website

www.kalamazooacs.org



Do you have questions, comments, or would like to contribute to this newsletter?
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Newsletter for the Kalamazoo Local Section of the American Chemical Society

June 5, 2017

Vol. 7 – Issue 4

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Chair's Comments

She blinded me with Science - which has shined bright enough in Kalamazoo this spring to inspire not just Thomas Dolby, but all of us. And KACS has been square in the middle of the action.

Poetry in motion – About 900 people joined in for the Kalamazoo March for Science on Earth Day (22 April). Doug Williams (KACS Alternate Counselor) was an invited speaker at the event, delivering very well received words that you can read in this newsletter.

Elements in harmony – Lydia Hines (KACS Councilor), Greg Johnson (WMU Chem Club President) and the WMU Chem Club ran two KACS Chemists Celebrate Earth Day events again this year. One at Celery Flats (15 April) and the other at the Kalamazoo Nature Center (22 April) attended by hundreds of enthusiastic families.

When I'm dancing close to her - In addition this year, KACS was a sponsor and exhibitor at the Kalamazoo Earth Day Celebration in Bronson Park, where Tom Runge, Doug Williams and Steve Secreast had a great time running a chem demo where we had people aged 7 – 70 doing chemistry.

Deep as any ocean – During April James Kiddle (KACS Education Committee) delivered the 36th annual KACS competitive chemistry exam to area high school students, the excellent results of which demonstrate that the future of chemistry in Kalamazoo is in very good hands.

I can smell the chemicals – this has truly been a bright spring for science and chemistry in Kalamazoo, and for KACS. I'm very much looking forward to our next events. Come on out and join the fun.



KACS is an AWARD WINNER!

The **Regional P3 Award** (Partners for Progress and Prosperity) was awarded to our Section and will be presented at the Great Lakes Regional Meeting in Fargo, ND, on June 29. The ACS website states the following about the P3 Award:

The purpose of the P3 award is to encourage and *recognize successful and exemplary partnerships* between industry, academia, government, small business and/or other organizations, including ACS local sections, ACS divisions, ACS international chapters, other societies or various entities domestic or overseas resulting in impactful outcomes in one or more of the following categories:

- Improving the public perception and appreciation for chemistry
- Promoting career advancement opportunities and/or supporting entrepreneurship in the chemistry enterprise
- Advancing advocacy efforts with government and other thought leaders
- Supporting STEM (Science, Technology, Engineering & Mathematics) education and/or research

Our thanks to Elke Schoffers for submitting the application!

KACS is a finalist for two more awards!

KACS made it to the finals for not just one, but two, 2016 ChemLuminary awards! The categories for the two awards are “Outstanding On-going NCW Event” and “Outstanding Performance by a Local Section (Medium Size).” Finalists will present a poster showcasing their event &/or section at a poster session on Tuesday August at the 254th ACS National Meeting in Washington, D.C. Winners will then be announced and the presentation of awards will occur later that same evening. The presentations will include awards given by 18 committees of the Society.

Our thanks to Brian Eklov, Past-Chairperson, for submitting the application!



Click [here](#) to learn more about ChemLuminary Awards

Multisection Mixer at CERM

The Midland, Kalamazoo, Western Michigan, and Detroit Local Sections invite you to a Multisection Mixer during the ACS Central Regional Meeting.

Friday June 9, 2014

4 – 6 pm

The Gallery at the Henry, CERM

Are you attending the ACS Central Regional Meeting running June 6-10 in Dearborn? If so, please plan on attending a multisection mixer at the meeting being presented jointly by the Midland, Kalamazoo, Western Michigan and Detroit local sections. This will be an opportunity to network and make new connections with other ACS section. Exchange ideas with other local section members and leaders. Perhaps those in attendance can leave with some ideas on how to create and plan new multi-section events!

Multisection RSVP: Steve Secrest, stevesecrest37@yahoo.com



Register for CERM: <http://acscerm2017.org/>

Great Lakes Region Meeting

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REPORT

KACS Award Gathering

Monday, May 8, offered inviting weather for our 44th celebration of our Section's Award Ceremony. Approximately 95 students, parents and friends gathered in the atrium of the Chemistry Building at WMU to celebrate the accomplishments of High School students and a teacher, College students, as well as to recognize service to the American Chemical Society and to the local section. Our Examination subcommittee chair, Dr. **James Kiddle**, was his typical efficient self in administering the requisite examinations and in making all the necessary arrangements for this gathering – the décor and food were much appreciated.

Our section chairman, **Steve Secreast**, introduced our two College awardees (one from Kalamazoo College and one from Western Michigan University) followed by our Outstanding Chemistry Students as nominated by each student's teacher (each of the 9 present received an Amazon Gift card and a certificate) and ended by naming and giving awards to the 21 winners of our competitive scholarship examination – we had a tie for first and fourth places and a 4-way tie for seventh place! The students were happy to let us know their future plans, most of which involved STEM study.

The teacher recognized was Ms. **Michelle Mason** from Portage Northern HS. The Section award for service went to **Mark Wolf** who has continued as our section webmaster despite his move to Chicago for graduate school; **Brian Eklov** received a *Salute to Excellence* plaque; and **Doug Williams** received the 2016 Volunteer award from the Committee on Community Activities for his major role in our 30th annual Museum Event.

It was very heartening also to recognize **3 60-year members of ACS - D. C. Wendt, Ray Judy, and Chuck C. Coverdale** - and **6 50-year members - John Engelmann, John Greenfield, Mike McCarville, Alan Sarapu, Lydia Hines, and Doug Morton** (in absentia); each of them received a certificate of appreciation from ACS for service to the Society.

This year's event was a wonderful reminder that the future of our science is in "good hands" and each attendee seemed to enjoy the opportunity to meet friends who come each year and to make new acquaintances.



Student awardees



***Sarah Glass, Kalamazoo College awardee
Jacob Kirkendall, Western Michigan University awardee***



Michelle Mason, Portage Northern Chem Teacher, Awardee



50-year members present

REPORT

Chemists Celebrate Earth Day

It seems like Chemistry outreach events come around quite often! Every Spring brings Earth Day, celebrated on April 22; the American Chemical Society participation, now in its 15th year, coincides with that day. Local Sections are asked to conduct outreach activities in their communities, and our Kalamazoo Section has done that for all but the first (pilot) year.

Each year we have offered activities and materials at the Kalamazoo Nature Center (KNC) during their Earth Day celebration; for two of the 14 years we had an additional outreach event at the Oshtemo Branch of the Kalamazoo Public Library, and for the last two years, when the Library has not held an Earth-Day theme event, we have cooperated with the Green-a-thon experience at the Celery Flats in Portage.

This year the theme of Chemist Celebrate Earth Day was “Chemistry helps feed the world”. Also this year our Section has been fortunate to have a group of Chemistry students at Western Michigan University who have taken a keen interest in reaching out to young people with experiments which would engage them. These demos were done at The Celery Flats on Saturday, April 15 and at The KNC on Saturday, April 22. They made chromatography flowers, and they worked with the patrons to identify starch in food-stuffs as well as other items in daily use; they also offered educational materials. Students who helped at the Kalamazoo Nature Center were Renae Mroczek, Megan Callaghan, Emily Hanners, Jessica Henderson, Erin Heath, Greg Johnson, Jake Kirkendall, Dyonna Almon, and DeJainara Davidson. Those who worked at the Celery Flats event were Herwin Crespo-Sandoval, Jerome Davis Jr., Erin Heath, Renae Mroczek, Greg Johnson and Jessica Henderson.

This year was unusual in that April 22 was also the day of a new activity, the March for Science, which in Kalamazoo ended at Bronson Park for the inaugural Kalamazoo Earth Day Celebration. The weather was perfect for the hundreds of attendees, who from 3-8 pm enjoyed music, food, science podium presentations and about 50 science-related exhibitors.

KACS was there as a sponsor/exhibitor. Tom Runge, Doug Williams and Steve Secreast ran our KACS booth, which centered on a participatory green chem demo where we had people convert iodide in aqueous solution to I_2 using just a 9-volt battery. Based on the volume of reagent we went through, we had at least 150 people try the demo. It was great fun watching people scoping us out as they walked by our booth, and then when we called them over and had them try it, seeing them really get into the whole thing. Was great too, seeing many people just wanting to talk about chemistry once we started speaking to them. We also had some giveaways that we handed out, the biggest hit being pocket periodic tables, which was cool to see.

We received many thanks from the celebration organizers, in part for being a sponsor, but more for being one of the few exhibitors providing a demo for people to try. Talking chemistry and science is fun, but actually doing it is much better. Doug took the photo below of Tom and Steve in our booth. Additional photos of the celebration are available on the Celebration's Facebook page at www.kalamazooearthday.org.



REPORT

March for Science

Over 800 people turned out in Kalamazoo on a beautiful sunny day to cheer the importance of science in government by gathering at the center of the WMU campus and walking to Bronson Park on the afternoon of Saturday, April 22. The [Kalamazoo event](#) was coordinated by ProKzoo with assistance from the Kalamazoo Nature Center. The American Chemical Society announced its support for the event a month earlier in [Chemical & Engineering News](#). Local section member Doug Williams spoke briefly to those gathered in Kalamazoo. His remarks are below.

It is a privilege to speak today on behalf of our local section – the Kalamazoo Section – of the American Chemical Society, the largest scientific society in the world. The ACS is supporting the national March for Science as a nonpartisan event to celebrate the contributions of science for improving the human condition and addressing the world’s most pressing challenges. ACS is pleased to join its support with the American Association for the Advancement of Science, American Geophysical Union, American Association of University Professors, California Academy of Sciences, New York Academy of Sciences, Society for Neuroscience, Sigma Xi, and the Union of Concerned Scientists. The March for Science coincides this year with the Chemists Celebrate Earth Day, a nationally coordinated annual program to recognize the importance of chemistry in understanding our planet and her ecosystems. Our local section is conducting outreach events today at the Kalamazoo Nature Center and Bronson Park. The theme of this year’s ACS outreach event is “Chemistry Helps Feed the World.” I encourage you to stop by our table in Bronson Park after the march.

Science is a means of knowing, a philosophy. The natural and physical sciences are the study of the material and energy universe that we occupy. This knowledge is gained by experiment and it is supported by repeatable and documented testing. The practice of science is often an individual endeavor but to be useful, results must be shared openly and critically.

So why are we here today? At this time in our nation's history, we are witnessing broad and politically significant rejection of scientific understanding – of earth's climate, of energy use, of water resources, of food, of public health. Individually, we may have strong feelings about the priorities and potential solutions to these issues. We won't resolve these differences quickly but to resolve them at all requires scientific understanding. In other words, ignorance is not a strategy. I repeat, ignorance is not a strategy.

I suggest to you today that responsible government has two compelling reasons to invest in science. The first and most obvious is to protect us. We need science to help us preserve our ecosystems, control diseases, keep us warm, feed us and reduce the harm of natural disasters. The second and, I believe, most important reason is to realize our potential. Science expands our capacity to live more fully, to imagine what is possible, to support an ever increasing human population on Earth sustainably and more equitably. In this way, science provides hope for the future, creative solutions and – yes – humility for our place in the universe. I believe that good government also has an interest in our collective humility. Scientific skepticism teaches humility and persistence. Many a beautiful theory has been crushed by ugly facts. We have often had to change our thinking about technologies that we thought were acceptable and safe. As examples, think of tetraethyl lead, chlorofluorocarbons, DDT, thalidomide, PCBs and, recently, nonbiodegradable microplastic particles in our lakes and oceans.

So, we must keep working at this. Our world is complex and science proves it again and again. Our pursuit of scientific understanding is filled with mistakes and false starts but this is exactly the point. The scientific method is self correcting for those who persist. Did I mention that ignorance is not a strategy?

Government has fundamental and compelling reasons to invest in science. Our best practices suggest the following principles for making these investments. Government should:

- 1. Openly share scientific findings.*
- 2. Subject such findings to peer review and require validation of methods and results.*
- 3. Strongly support science education and research, basic as well as applied.*

Scientific literacy is an asset to our nation, to our citizens. We ask our government to feed this literacy by example and commitment. Let's have a great march today and spread the message.

COUNCILOR REPORT
253rd ACS National Meeting
San Francisco, CA
April 2-6, 2017

Lydia E. M. Hines

- As has been the custom for the past several years, ACS hosted an Outreach Event just prior to the meeting in San Francisco , on April 1. It was my pleasure to help at that event where we saw many families come by to explore science topics and receive the plentiful materials our professional organization makes available.

- The Council selected Bonnie A. Charpentier and Willie E. May as candidates for 2018 President-Elect.

These two candidates, along with any candidates selected via petitions, will stand for election in the Fall 2017 National Election.

- Our Kalamazoo Section was recognized for its 75th anniversary

- The Council voted to set the member dues for 2018 at the fully escalated rate of \$171. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.

- On the recommendation of the Committee on Local Section Activities, the Council approved a petition from the Santa Clara Valley Local Section in California to change the name of the section to the Silicon Valley Local Section.

- The Committee on Nominations and Elections (of which I am a member) solicits Councilors' input of qualified individuals for President-Elect and/or Directors for future consideration. Suggestions may be sent to nomelect@acs.org. This Committee works diligently to find excellent people to recommend for positions on committees and the Board. At this Spring meeting we deliberated for a minimum of 25 hours outside of the council meeting which, for committee members, starts at 6:30 a.m. on Wednesday morning J

- As of December 31, 2016, the ACS membership was 156,129, which is 0.5% less than on the same date in 2015. The number of new members who joined in 2016 is 23,700. The Society's overall retention rate is 83.5%. The Committee on Membership Affairs also reported that the number of international members has increased to 27,388, exceeding the committee's target by 5%. Retention of graduate students increased by 2% to 76.2%.
- Meeting Attendance: As of Tuesday, April 4: Total Attendance: 18,850

Special Discussion

The Council conducted a special discussion, "ACS Yesterday and Today: Paving the Way to Tomorrow," to gather input for the Joint Board-CPC Task Force on Governance Design. Forty Councilors approached the floor microphones to share observations, comments, and suggestions to assist the task force in identifying opportunities and issues for governance improvement. The task force offered three questions to guide the discussion: What should the Society and its governance do differently to achieve its objects? If you could change one thing about ACS governance, what would it be? What should the task force leave "as is"?

- The Board of Directors is developing a statement based on the Society's Core Value of diversity and inclusion in response to the repeal of the North Carolina law known as House Bill 2 ('bathroom bill') and similar proposed legislation in Texas, and is assembling a representative group of stakeholders to advise it on actions relating to the location of Society meetings.
- The Board passed a resolution expressing appreciation to Denise L. Creech for her 27 years of service in the Membership and Scientific Advancement Division, which she led as director for nearly 14 years.

Note: I appreciate the opportunity to serve our Section as your councilor and am always available to facilitate your contact with ACS. - *Lydia*

Job Posting

Bridge Organics, a contract research and chemical manufacturing company located in Vicksburg, MI, has an opening for a full-time EHS and Quality Specialist.

To see details for the position and candidate qualifications, as well as to submit a resume or application, navigate to the MichBio Career Center or the Bridge Organics website at www.BridgeOrganics.com

Visit our website www.kalamazooacs.org



Do you have questions, comments, or would like to contribute to this newsletter? Send an email to Christine Pruis, Communication Chair at ACSkzoo@gmail.com

Newsletter for the Kalamazoo Local Section of the American Chemical Society

September 11, 2017

Vol. 7 – Issue 5

2017 KACS Executive Officers

Chairperson

Steve Secreast

chair@kalamazooacs.org

Past-Chairperson

Dr. Brian Eklov

brian@eklov.org

Chairperson-Elect

Vacant

Secretary

Angela Willson

angelamwillson@gmail.com

Treasurer

Bill Schinzer

bschinzer@arrowps.net

Councilor

Dr. Lydia E. M. Hines

lemhwgh@gmail.com

Alternate Councilor

Dr. Doug Williams, Kalsec, Inc.

dwilliams@kalsec.com

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Chair's Comments

Dihydrogen monoxide. The presence of this relatively simple chemical in liquid form is essential for the existence of life as we know it. It also provides major recreation as rivers, lakes and oceans (preferably with beaches). However, as Hurricane Harvey reminded us, it can also cause loss of life and severe destruction. This tragic event demonstrates in classic form that all chemicals can be both beneficial and harmful, depending on factors like concentration, degree of reactivity and application. It reinforces the important need for chemists, maybe now more than ever, to help us understand how to maximize the benefits of all chemicals and chemical products, while minimizing their potential for doing harm. Our deepest condolences and hopes for successful recovery go out to the victims of Hurricane Harvey. A number of relief websites are available for donations (the Google donation site will match funds).

Locally, a number of KACS members spent part of this summer learning about the ACS National Historic Chemical Landmark program. This is an interesting ACS program that recognizes historic chemistry-related achievements, mainly via installation of a bronze plaque (similar to the roadside historic event markers seen across the country). Eighty-some landmarks have been granted since the program began in 1993.

Read about the program and the landmarks here:

https://www.acs.org/content/acs/en/education/whatischemistry/landmarks.html?_ga=2.269150513.1507079022.1504019808-1658144557.1491248589.

In thinking about this program and the notable history of chemistry in Kalamazoo, some of us decided to put together a nomination team and package, which was submitted to ACS in August. The subject of the proposed landmark is: Steroids and Upjohn – a Profile of Innovation. A short narrative provided as part of the nomination package is included in this month's newsletter. It really is an excellent story, describing work very worthy of historic landmark designation. Thanks to the nomination team: Tom Runge, Bill Kovats, John Manski, Ken Ball and Jeremy Winkworth. We hope to hear back from ACS soon regarding our nomination.

Heading into fall now, a number of KACS activities are coming up with opportunities for involvement, information about which is provided in this newsletter. Read about the need for members to help John Stodola with a project, to be mentors for a speed-networking event, and to volunteer to help with the National Chemistry Week Museum Day. Also included in this newsletter is the first call for nominations for open 2018 KACS Officer positions. And welcome to Bill Schinzer, joining the KACS Executive Committee as Treasurer. There are plenty of opportunities to get involved with the KACS local section, to get the most out of our ACS membership, why not choose one and join in.

Meet our new KACS Treasurer



Bill Schinzer will be taking over the KACS Treasurer duties as Andre Venter begins his sabbatical in Paris this month. Bill earned his Ph.D. in physical chemistry from Indiana University and worked for the Upjohn Company and its successor companies of years past. He worked with analytical R&D groups, developing methods and solving interesting problems for both drug product and drug substance support. Bill is a veteran of several Boy Scout Chemistry Merit Badge days. In 2006 he started work for Eurofins, a small contract research organization in Portage, serving as their Director of Method Development. In late 2010 he started his own firm, Arrow Pharma Services LLC. He currently works with large pharmaceutical firms as well as startups developing new drugs, generally helping them solve chemistry and pharmaceuticals problems. Bill and his wife, Martie, live in Portage and enjoy driving along in their 1974 VW Bus. Their children, Eric and Chris, are not as fond of the bus, perhaps because it used to honk its own horn occasionally.

KACS Lab Coat Initiative

Earlier this year KACS applied for and received an ACS Innovative Grant to obtain KACS-logoed lab coats for use by members and students. The crux of the approved grant proposal was to have lab coats labeled with the KACS logo for use by members and to be loaned to local chemistry students, as a means of advertising KACS, promoting a sense of identity.

We now have the lab coats available. So, are you a member who does chem demonstrations at local schools and events? Or a local student taking lab courses? Then please consider using one of our new lab coats, and show your KACS pride.

These lab coats, property of KACS, are available for long-term, honor-system loan to all members and affiliates. For more information and to request a lab coat, please contact Steve Seceast (chair@kalamazooacs.org).



Report: Project Seed

This summer, Victor Plascencia, who will be a senior at Comstock High School in the fall, worked with Professor Dwight Williams at Kalamazoo College on a research project titled The Synthesis of Novel Candidate Serotonin Receptor Ligands. Victor performed his work as a participant in the American Chemical Society's Project SEED program and presented his findings alongside those of Kalamazoo College chemistry students at a departmental poster session on August 25.

Victor was nominated for a Project SEED research fellowship last spring by his high school chemistry teacher, Ms. Charlene Dailey of Comstock High School. Project SEED provides fellowships for high school rising juniors and seniors to participate in summer research at academic, government or industrial laboratories. The program emphasizes career development and motivation of students to pursue higher education in the natural sciences.

This was Professor Williams' first time to serve as a mentor for Project SEED. Victor expresses his thanks to Professor Williams and the ACS for the opportunity to develop his interest in chemistry and research.

Call for KACS Officer Nominations

Here is your opportunity to become more involved in your local ACS section. We need candidates to run for the following positions for 2018:

- Chair-elect (1 year term, followed by 1 year as Chair, then 1 year as Immediate Past-Chair)
- Chair (1 year term, followed by 1 year as Immediate Past-Chair)
- Secretary (2 year term)
- Councilor (3 year term)

If you are interested in running for any of these positions, know of someone who might be interested, or have any questions regarding the responsibilities involved, please contact Steve Seceast (chair@kalamazooacs.org) or Lydia Hines (lemhwgh@gmail.com).

To learn more, all are also encouraged to visit the "Executive Committee Officers and Chairs" and "Bylaws" pages of KACS website: www.kalamazooacs.org.

Plan Ahead: GLRM 2019

Mark your calendars for the 2019 Great Lakes Regional Meeting! It will be co-hosted by the Chicago and Joliet Sections (both in our Region) and is scheduled for May 1- 4 in Lisle, IL, at the Sheraton Hotel. Co-general chairs are Barbara Moriarty (Chicago Section) and Jason Kelleher (Joliet Section) and the theme is “Chemistry Connections – Careers. Education. Sustainability”

Chemistry Day at the Museum!

Please consider participating in Chemistry Day at the Museum - our National Chemistry Week (NCW) 2017 outreach on Saturday, October 14, 12 noon to 4 pm.

It will be our 31st year of offering this popular outreach event, and we look forward to having **YOU join us** as a presenter of a hands-on activity for the ~1000 attendees. The **theme** for this year’s celebration is “**Chemistry Rocks**” with a particular focus on gemstones, rocks and minerals, but our activities need not be limited by that designation.

This event is our highly-anticipated and well-received hands-on program for the Southwest Michigan community and it is held annually at the **Kalamazoo Valley Museum** with the able help of Annette Hoppenworth. To present the large number of activities (usually ~30) we depend primarily on **YOU, our members** to volunteer as leaders at each of the tables so that young people, and those who bring them, will get a taste of the excitement of chemistry in everyday life. Consider this as your contribution to our patrons’ STEM education.

If you are willing to give time on **October 14** we have ideas of hands-on activities from which you may select, or you may lead an activity of your own choosing; all you need to do is to identify yourself to our NCW coordinator, Lydia Hines, at lemhwgh@gmail.com or 269-375-7349, and let her know your availability to help, or let her know what activity you would like to lead. Many thanks.

Kalamazoo**VALLEY**
Museum



P3 Award Winner

Our Kalamazoo Section was the recipient of the P3 (Partnership for Progress and Prosperity Award) at the 2017 Great Lakes Regional Meeting in Fargo, North Dakota, for our “Sustainable Science – Recycle a Poster” activity each November. What impressed the selection committee specifically were (a) the opportunity afforded by this event to bring science into the public eye since the event is open to all, (b) the benefit of connecting future scientists with today’s professionals through networking in an informal setting, and (c) the fact that the event provides a forum for posters to be given a “second lease on life”, thus reinforcing the theme of sustainability – i.e., they are presented after having already been presented at other conferences. We appreciate the effort made by Elke Schoffers to submit our nomination. The Award consists of a medallion and a framed certificate for each of the three partners in the award (in our case the KACS, Zoetis and Bell’s Eccentric Café’) as well as a cash award of \$333 for each. The Award ceremony was on June 29 and Lydia Hines was present to receive the award in the Section’s behalf.

Volunteer Opportunity

This is a call for volunteers to assist Schoolcraft High School students with a project looking into how wastewater (sewer, septic, storm) is treated, transported and transformed. John Stodola will be working with Josh Willoughby’s (chemistry teacher) class on this project during the upcoming school year. We would very much like to have more mentors/advisors. Please contact John ([269-377-5378](tel:269-377-5378), jdstodola@mac.com) or Josh ([269-370-6918](tel:269-370-6918), willouj@schoolcraftcs.org) if you are interested and available to help. Experience with wastewater handling would be nice, but not necessary. THANKS!

John Stodola
South County Sewer and Water Board
KACS Past-Chair



Speed Networking Event

Local American Chemical Society (KACS) members and students interested in Chemistry are invited to attend a fun and interactive networking event. Co-hosted by the Center for Career and Professional Development, Kalamazoo College Chemistry Department and the American Chemical Society Kalamazoo Chapter.

The premise for this event is to connect local chemistry college students (WMU, K Col, KVCC) with local working chemists for information sharing. The set up will be like that for speed dating, with participating chem students rotating through 5 minute (or so) sit downs with participating working chemists, the students asking questions related to chem careers, the working chemists providing answers/information based on personal experience. KACS has been asked to provide members to serve as a diverse working chemist panel. This is a great, painless, low time commitment opportunity for us to share our knowledge and experience with chem university students looking to start their careers.

Whether you are a potential mentor (experienced individual who can advise & guide on potential career paths) OR a student interested in meeting with chemistry professionals, please join us for this gathering!

Tuesday, October 10, 6-9pm,
Kalamazoo College, Hicks Student Center, Banquet Rooms:
<http://www.kzoo.edu/map/KCollegeCampusMapOct2016.pdf>

Parking available in the open lot behind Hicks Student Center and on nearby streets.

6:00pm Check-in:

Student Check-in Banquet Room West

- Pre-event pointers
- Light dinner-sub and salad

Mentor Check-in Banquet Room East

- Pre-event gathering, ACS mentor mingle
- Light dinner-sub and salad

6:45pm Welcome and event introduction, Banquet Rooms

7:00-8:00pm Networking Activities

8:00-9:00pm Wrap up and student prize drawing

KACS members interested in participating as mentors, please contact Steve Secrest, chair@kalamazooacs.org.

General event questions? Please contact Jackie Srodes, jsrodes@kzoo.edu.



Climate Change Symposium at ACS National Meeting

KACS supported a climate change symposium at the 254th ACS Fall National Meeting. Here is a thank-you note and a report from the organizers.

Dear All,

I would like to thank KACS for continued support in the amount of \$300 for the Division of Environmental Chemistry at the recent ACS meeting in Washington, DC, which took place on Tuesday morning on August 22, 2017. We had an exciting lineup of speakers (see below), including a scientist, Chris Avery, from the U.S. Global Change Research Program.

Elke Schoffers
Symposium Co-Organizer
KACS Past-Chair

Division of Environmental Chemistry Symposium:

ENVR 049, 254th ACS National Meeting & Exposition in Washington, DC. August 22, 2017

TUESDAY MORNING, Aug. 22, 2017, Renaissance Washington, DC Downtown hotel

Science & Perception of Climate Change (Oral)

S. O. Obare, E. Schoffers, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 Engaging Diverse Audiences with Climate Change: Message Strategies for Global Warming's Six Americas. **J. Kotcher** (George Mason University)

8:35 **4th National Climate Assessment and Beyond: Informing decisions across sectors and scales.** **C.W. Avery, D. Reidmiller, K. Reeves (U.S. Global Change Research Program)**

8:55 Climate science literacy, educational tools for the lifelong learner. **G.P. Foy, K.E. Peterman, R.L. Foy, L. Conrad** (York College of Pennsylvania)

9:15 Why do students respond favorably to attempts to teach climate change? **G.M. Bodner** (Purdue University)

9:40 Intermission.

9:50 Response to a warming world. If not us, who?. **J.A. Bell** (Chemistry, Wisconsin Initiative for Science Literacy)

10:10 Global warming is unequivocal: From Arrhenius to Keeling...facts are not enough to influence public sentiment. **B.Z. Shakhashiri** (University of Wisconsin-Madison, Madison)

10:30 Can science be translated to the public? How popular media and other stakeholders frame the climate change debate. **E. Schoffers** (Western Michigan University)

10:50 How culture shapes the climate change debate. **A.J. Hoffman** (University of Michigan)

11:30 Panel Discussion: "When facts don't matter" - **Separating Fiction & Rhetoric from Climate Science Focusing on the Science of Science Communication**

Our Nomination for Historic Chemical Landmark Nomination

Steroids and Upjohn: A Profile of Chemical Innovation

By the end of the 1940's various steroid compounds of the androgen, estrogen, progestogen and adrenocortical classes had been isolated from animal tissues, structurally characterized, and studied for medicinal properties. As the decade closed out a chemistry breakthrough discovery that stood out was Russell Marker working out chemical synthesis of progesterone from diosgenin extracted from Mexican yams, obviating the need for animal tissues. On the medical front, a major breakthrough that shone through was the discovery by Mayo Clinic researchers that the corticosteroids like cortisone were effective as anti-inflammatories treating the debilitations of diseases like rheumatoid arthritis.

At the dawning of the 1950's an overwhelming demand for cortisone arose. However, cortisone was still being manufactured almost entirely as an extract from animal adrenal glands, making the supply very low and the cost very high. Merck had a synthetic process for manufacture of cortisone, but the process involved over 30 chemical steps, a complexity that also limited supply and came with a high cost. Other attempts at synthesizing cortisone had hit dead ends. Percy Julian was able to synthesize the related compound Reichstein's Compound S, but could not find a way to carry out a key oxygenation step needed to carry the process all the way to cortisone. Similarly, Russell Marker could not find a way to oxygenate progesterone to convert it to cortisone (Carl Djerassi following up on Marker's work did work out a chemical process for converting progesterone to cortisone, but the process was too complex to be commercially feasible).

Concurrent with the growing cortisone demand and lack of supply, The Upjohn Company was in the midst of a head first plunge into the sea of steroid chemistry. The company had been working with steroids during the 1930's and 1940's, the work of scientists George Cartland and Marvin Kuizenga being most sited during that period. The two developed processes for extraction of steroid fractions from animal adrenal glands (marketed as a product named ACE), and invented an analytical unit for adrenal hormone potency, the Cartland-Kuizenga Unit, becoming the worldwide standard. In the mid-1940's in a bold future-looking move, The Upjohn Company took on expansion of their R&D organization, creating interdisciplinary steroid discovery and development teams consisting of chemists, biochemists, microbiologists, engineers and production managers. The company also expanded their fermentation and chemical synthesis manufacturing facilities targeting the ability to manufacture steroid medicines with a volume capacity well in excess of expected demand. When the new unmet need appeared in 1949-1950 then, for chemical synthesis and mass production of cortisone, The Upjohn Company was in position to take on the challenge.

Due to this unprecedented focus on steroid chemistry, positive results were achieved relatively quickly. In 1950 the Upjohn R&D team led by Herbert Murray (a microbiologist) and Durey Peterson (a biochemist) discovered that a type of fungus that could be grown in fermenters could efficiently do the steroid chemistry that had been elusive to lab chemists around the world, selectively oxygenate progesterone to hydroxy-progesterone, which could be chemically converted to hydrocortisone and cortisone. This was a major chemistry breakthrough of the time. In addition to opening the door to a relatively simple, inexpensive and commercially scalable synthesis of cortisone, the discovery brought to life the chemistry of steroid microbiological transformations, and more generally the use of fungi (as an addition to bacteria) for chemical transformations. The team's success was also a testament to the strategy of using multi-disciplinary R&D teams, a practice that became standard for all pharmaceutical companies.

At almost the same time, a second Upjohn R&D team led by Haines discovered a bacterium that could selectively oxidize Julian's Reichstein's Compound S directly to hydrocortisone. This second major discovery confirmed the importance of using microbial transformations for performing complex steroid chemistry like selective oxidations. The discovery also meant that Upjohn had the option of having two potential synthesis routes to make cortisone. The progesterone route was selected to take forward based on expected availability and cost of materials.

From here, Upjohn chemists took the hydroxy-progesterone obtained from the microbial transformation of progesterone, and developed an elegant five step synthesis to end up with hydrocortisone, which in one additional step could be converted to cortisone. The process was refined, scale-up and moved to production, and by 1953 Upjohn was marketing low-cost, high-quality cortisone (Cortef) and hydrocortisone (Neocortef) products, which were very well received.

This alone would be a very good ending to a historic chemistry story, a team of scientists in the early 1950's apply a newly discovered mix of synthetic chemistry and microbiological biochemistry to bring a much needed medicine to patients in need. But what makes this story worthy of historic chemical landmark designation is that even more chemistry breakthroughs followed.

Having a process in hand for making cortisone from progesterone, Upjohn focused on the source of progesterone. In 1953, the progesterone was being supplied by Russell Marker's company Syntex, and was synthesized from diosgenin extracted from Mexican yams. Upjohn chemists Milton Herr, Heyl, Centolella and team had developed process for a four-step converting stigmasterol from soybeans to progesterone in 1950, and by 1955 they had refined the process so that Upjohn was able to start making its own progesterone. Soon stigmasterol from soy replaced diosgenin from Mexican yam as the primary plant-based starting material for steroid synthesis being conducted by most pharmaceutical companies.

To go with the switch to stigmasterol as a starting material, Upjohn scientist J. Ward Greiner and team developed an innovative leaching and counter-current process for recovering stigmasterol from the soy sterol mix produced as a by-product of soybean food processing,

truly becoming a classic example of using a sustainable source for a chemical starting material. Greiner's process for recovery of stigmasterol also recovered as a by-product, the related compound sitosterol. The chemistry for utilizing sitosterol as a starting material for steroid synthesis was not understood at the time, but rather than discarding the sitosterol byproduct, the company in a conservationist move starting stockpiling the very stable, water insoluble sitosterol. This stockpile grew for over ten years until a use was found for it.

During the late 1950's with corticosteroid production well in hand, the Upjohn scientists turned research toward discovery of next generation analogs of cortisone. Using the established approach of combining synthetic chemistry and microbial biochemistry, a number of new compounds were discovered and marketed, including prednisolone, methyl-prednisolone (Medrol), fluoroprednisolone (Alphadrol) and Oxylone, which showed for various anti-inflammation indications, better efficacy and safety profiles than did cortisone. Keeping manufacturing needs in mind, the chemistry processes developed used whenever possible, intermediate compounds from the main line cortisone process, a strategy, the use of common intermediates, that became standard for the pharmaceutical industry. The next generation discovery work also branched to include discovery of progesterone analogs including acetoxypregesterone and melengesterol acetate for contraception applications in the veterinary area, and medroxyprogesterone acetate (Provera) as a human contraceptive. As Motown became Hitsville USA in the music world, Kalamazoo also in Michigan, became Hitsville USA in the steroid medicine world due to Upjohn's long-term innovative approach to medicinal chemistry and manufacture.

Then in the 1970's already having a rapidly growing steroid medicine portfolio, another major microbiological transformation discovery was made. Upjohn scientist Merle Wovcha and team discovered a bacterium that selectively transformed sitosterol into a compound (hydroxyandrostendione), which could with additional slight chemical modification be plugged into the main line manufacturing processes for existing products. With this breakthrough the sitosterol stockpile that had been growing for over ten years as a byproduct of stigmasterol recovery from soy sterols, became a valuable starting material in its own right. With this discovery Upjohn was now not only sourcing starting materials from a sustainable source, it had found a way to utilize multiple materials from a single source, sustainability and conservation practices that were to become key principles of green chemistry. The discovery also opened up a whole new area for chemical exploration involving androstenedione compounds, including the application of novel silicon (SNAP) chemistry.

During the 1980's the work continued including the discovery of additional analogs and new sterol starting material sources, and improving production synthetic chemistry and microbiology biochemical step efficiencies and costs. By 1990, having strung together an unparalleled series of chemistry and manufacturing discoveries and developments, Upjohn had become the premier steroid medicine producer in the world. The company had a portfolio of over 30 medicinal steroid products and supplied steroid intermediates to a number of other pharmaceutical companies for synthesis of additional steroid medicines,

The significance of this chemical landmark achievement continues to be felt today. The Kalamazoo production facility, now as part of Pfizer Inc. continues today manufacturing steroid

medicines and intermediates for global markets. The Kalamazoo steroid manufacturing site was lauded in a 2017 Investor's Business Daily article as an example of how U.S. manufacturing can be made efficient and low cost enough to compete in today's global economy. This is a testament to the historic importance of The Upjohn Company's 1950-1990 steroid chemistry work



COUNCILOR REPORT

254th ACS National Meeting

Washington DC, CA

August 21-24, 2017

Lydia E. M. Hines

- The Council **defeated** a proposal from the Committee on Divisional Activities that it establish a **probationary Division of Space Chemistry**, effective January 1, 2018.
- **Ballots for the 2017 fall national election** will be distributed on September 29, with a voting deadline four weeks later, on October 27. In a change of procedures, all members with an email address on file and eligible to vote will receive an **electronic ballot with the option to request a paper ballot**. **Those members with no email address on file will be sent a paper ballot with the option to still vote electronically**. The ACS election vendor, Survey & Ballot Systems, will send three email reminders during the voting period to those who have not voted as of the reminder date.
- Information about ACS finances can be found at www.acs.org, at the bottom of the page, click 'About ACS', then 'Financial'. There you will find several years of the Society's audited financial statements and IRS 990 filings.
- The theme of the 254th ACS National Meeting was "Chemistry's Impact on the Global Economy." As of Tuesday evening, August 22, attendance was **12,904** (2,268 being international)
- Membership in AACT continues to grow and now stands at 4,500, with 88% being K-12 teachers
- The annual Leadership conference for new officers will be held in Dallas, TX, January 19-21, 2018.
- Starting at the **Spring meeting in 2021 there will be no scheduled Thursday sessions**.

- Beginning in 2017 Chemists Celebrate Earth Day (CCED) will be celebrated as Chemists Celebrate Earth Week (CCEW).
- The Board voted to **approve the advance member registration fee for national meetings held in 2018 at \$475**; and to **authorize two new program funding requests: (a) an ACS Online Course in Laboratory Safety**, and (b) **a New Faculty Workshop Series**.

• As part of his report, the Executive Director emphasized that membership recruitment is everyone's responsibility, and that an increase in the recruitment of members from the industrial sector must be a priority; mention was made of increasing efforts in cyber-security, with specific mention of the unacceptable activities of SciHub and ResearchGate.

Note: I appreciate the opportunity to serve our Section as your councilor and am always available to facilitate your contact with ACS.- Lydia

Visit our website www.kalamazooacs.org



Do you have questions, comments, or would like to contribute to this newsletter?
Send an email to Christine Pruis, Communication Chair at ACSkzoo@gmail.com

Newsletter for the Kalamazoo Local Section of the American Chemical Society

December 14, 2017

Vol. 7 – Issue 6

2017 KACS Executive Officers

Chairperson

Steve Secreast

chair@kalamazooacs.org

Past-Chairperson

Dr. Brian Eklov

brian@eklov.org

Chairperson-Elect

Vacant

Secretary

Angela Willson

angelamwillson@gmail.com

Treasurer

Bill Schinzer

bschinzer@arrowps.net

Councilor

Dr. Lydia E. M. Hines

lemhwgh@gmail.com

Alternate Councilor

Dr. Doug Williams, Kalsec, Inc.

dwilliams@kalsec.com

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ACS meeting report



MESSAGE

from the Chair

This was a bit of rough year, 2017, what with the hurricanes, earthquakes, volcanoes, wildfires, ridiculous politics and politicians, and the shameful and horrendous acts of violence. But some worthwhile events did occur.

In the world of chemistry the IUPAC approved this year four new chemical element names. Now for the first time in quite a while all the existing rows in the periodic table are filled. And all elements in the table, currently 118 of them, have names. KACS felt this occasion deserved recognition, so teamed up with the people of Kalamazoo to celebrate. That celebration was captured in an eight minute, twenty-four second movie that can be viewed at this web address: <https://youtu.be/zaZmjnkyEk8>. Check it out, a definite affirmation that love of chemistry is alive and well in Kalamazoo.

Also this year, KACS participated in multiple Kalamazoo Earth Day events, including the local March for Science. KACS also celebrated National Chemistry Week with our annual K Valley Museum Day, which was very well attended. The KACS annual Recycled Poster Event in Bell's Back Room continued its run again this year as a most popular local science event. KACS co-hosted with Kalamazoo College this year a very successful Speed Networking Event for local chemistry college students. KACS also put together and submitted a successful ACS National Historic Chemical Landmark nomination, recognizing the steroid chemistry work of Kalamazoo Upjohn Company scientists spanning 1950-1990. And of course we celebrated the 75th anniversary of KACS this year.

All in all, contrary to the many world events that occurred, this was a very non-disastrous, successful year for KACS. Well done Kalamazoo American Chemical Society Local Section. Happy holidays, happy new year, and let's continue the good work in 2018.



RESULTS

KACS Elections

Here are the results from this year's local section officer election:

Angela Willson –
re-elected as Secretary for a two-year term

Bill Schinzer –
elected as Treasurer to carry out the remaining year of the current two-year term

Lydia Hines –
re-elected as Councilor for a three-year term

The open Chair-Elect and Chair positions had some write-in nominations, but none that were willing to serve.

As a post-election note, Luke Chadwick stepped up willing to take the 2018 Chair-Elect position. Look for a profile on Luke in a future newsletter.

So, for 2018, KACS officers will be:

Executive Committee

Chair-Elect –	Luke Chadwick
Chair –	Steve Secreast (continuing by default)
Past Immediate Chair -	Brian Eklov (continuing by default)
Secretary -	Angela Willson
Treasurer -	Bill Schinzer
Alternate Councilor -	Doug Williams
Councilor -	Lydia Hines

Committee Leaders

Communications -	Chris Pruis
Education -	James Kiddle

REPORT

KACS Speed Networking

On the evening of 10 October at the K College Hicks Student Center, the Kalamazoo College Chemistry Department and Career Planning Office cohosted with KACS, a speed networking event for area chemistry college students. The purpose of the event was to connect local chemistry college students (K College, WMU, KVCC) with local working chemists (KACS members serving as mentors) for information sharing.

The event set up was like that for speed dating, with participating students rotating through 5-minute face-to-face time with participating mentors. The students asked questions related to establishing and building chem-related careers and the mentors provided answers and information based on personal experience. The evening ended with refreshments and time for free-style follow-up interaction between the students and mentors. KACS provided prizes for the participants including some randomly awarded ACS student memberships (paid for via grant money provided by ACS).

Event feedback from mentors and students alike was highly positive, with the event considered a valuable and worth-while success. Jackie Srodes from the K College Career Planning Office summarized: "What a FANTASTIC event last evening for the area college students and members of the Kalamazoo American Chemical Society that served as mentors!!" Jeff Bartz, Chair of the Kalamazoo College Chemistry Department added: "I've had several students stop and thank me for the event. Thank you to everyone involved!" The organizers agreed that we would like to see this become an annual event.

Many thanks to the KACS members that served as mentors: Ashok Patel, Beth Nagash, Bill Schinzer, Brian Eklov, Brianna Galli, Bridget Lorenz Lemberg, Charissa Oliphant, Chris Prais, Dave Erdman, Denis Billen, Derek Sheehan, Doug Williams, Jana Deering, John Manski, Julie Lorenz, Mara Birndorf, Rachel Wilson, Susan Sheehan, Tim Johnson, Tom Mulhern, Val Vaillancourt.

Photos show the excellent student – mentor engagement the event achieved.



REPORT

Student Reception

On 28 October KACS threw a reception for the Kalamazoo chemistry student chapters, at the Kalamazoo Curling Club. The purpose of the event was to say thanks to the WMU Chemistry Graduate Student Association (CGSA), the WMU Chem Club and the Kalamazoo College Chem Club for their community outreach work. A big part of what makes the annual KACS events like Chemists Celebrate Earth Day and Chemistry Day at the Museum successful, is the demonstrations and volunteer work done by the student chapters.

The reception involved an opportunity to try the sport of curling, followed by refreshments, with KACS providing some ACS student memberships as prizes (paid for with ACS grant money). Many thanks to the Kalamazoo Curling Club member volunteers for getting us out on the ice.

Photos show that a very fun time was had by all.

Photo A: KACS at the Kalamazoo Curling Club.

Photo B: Chem students and curling club coaches on the ice.

Photo C: Kristi Tullis of the CGSA celebrates her perfect shot to the center of the scoring rings (yellow rock), making Bri Leddy of the Kalamazoo College Chem Club smile while waiting her turn.

Photo D: Sarut Jianrattanasawat of the CGSA delivers a rock like curling veteran.

Photo E: Liz Knox of the Kalamazoo College Chem Club shows Olympic-quality rock throwing style.

Photo F: Curling coach Garnet Eckstrand signals “great shot” to Bri Leddy down-ice, as Bri’s blue shot rock slides into scoring position.



UPDATE

Lab Coat Initiative

Earlier this year KACS received Innovative Grant money from ACS to purchase lab coats labelled with our KACS logo. The purpose of this initiative is to have lab coats available for use by KACS members and local chemistry students, providing needed lab personal protection equipment, and providing a mechanism for promoting KACS and instilling a sense of identity for KACS members.

Here are some photos of the lab coats in action:

Photo A: Dr. Jeff Bartz (Dept. Chair), Mr. Mike Walsh and Dr. Dwight Williams of the Kalamazoo College Chemistry Department.

Photo B: Kristi Tullis (WMU CGSA Leader) and Angela Willson (KACS Secretary) bringing chemistry to Amberly Elementary School (Portage).

Photo C: KACS Executive Committee and Student Chapter Leaders modelling the lab coats.

Photos D and E: Kalamazoo College Chem Club working Chemistry Day at the Museum.

Photos F-I: Scenes from the KACS-produced, promotional/educational short movie: *Elements of Kalamazoo*.



REPORT

National Chemistry Week Event

Unlike other years' beautiful October weather on our Chemistry Days, this year the 14th of October was an unusually rainy and cool day in Kalamazoo. An enthusiastic group of 60+ volunteers - 15 ACS members, 5 ACS student members and 40 students or other colleagues from 2 high schools and 3 local colleges and several industries, etc. - gathered to present 25 separate hands-on activities and demonstrations and to hand out resources to over 1000 attendees at our much-anticipated 31st 4-hour event at the Kalamazoo Valley Museum, the venue which has graciously been our host for this event for the past 30 years. Publicity had been sent to K-12 teachers and to other public venues by e-mail and social media, and through the medium of TV to the broader community in SW Michigan, and even to the northern Indiana border by friends of friends who learned of it through the museum's and our announcements! Given the theme of this year's event, **Chemistry Rocks!** colleagues from the Kalamazoo Geological and Mineral Society joined us, and they presented some of their displays and talked to the patrons regarding how chemistry and geology are intertwined.

Below are three pictures of favorite activities: Elephant Toothpaste, Slime, and Oobleck.





THANK-YOU LETTER

National Chemistry Week Event

Hi KACS!

We had a wonderful night at our second Lake Center Elementary "I<3 STEM" night on November 30, 2017. We estimate that there were over 800 people and I'm not counting the number of students in attendance. There seems to have been a balanced distribution of attendance across the 5 – 11 year old range. It's rumored that some of the public heard and came to check it out too. This is an event we hope to do again.... as it went SUPER well 😊 "Big Shout outs" to the Kalamazoo Section of the American Chemical Society for providing booklets and funding for our event. With your support we were able to purchase needed materials, and the Celebrating Chemistry booklets were given out in handle bags, along with trading cards that featured STEM professionals. The WMU ChemClub table (picture included below) helped the children make slime and change copper pennies to "silver or gold" pennies.

On behalf of the Lake Center PTO, the students, staff and families, thank-you!

Sincerely,
Stephanie Norg
STEM event organizer
Lake Center Elementary
Portage, MI



TRIP REPORT

254th ACS National Meeting

Gabe Kornis' (50+ yr ACS member) gives his personal impressions from the 254th ACS National Meeting, August 20-24, 2017, Washington DC

A. Organic Chemistry

1. *Robert Burns Woodward Centennial Symposium*

For those of us who are old enough, and had the pleasure of attending the 2 to 4 hour lectures given by RB Woodward and admiring the structures drawn with multi colored chalks on a black board, this Symposium was an emotional experience.

The ACS historian, Jeffrey Seeman, showed many original hand written letters, notes, photographs, the iconic blue tie, etc., retrieved from the Harvard archives. Also present were the two Woodward children, now in their forties. Crystal Woodward, his daughter, who is an artist, gave a talk on the elegance and beauty of Woodward's structures and growing up in a household where chemistry was king.

Also contributing to the symposium was Sarah Reisman from Cal Tech, a new star in the field of natural product synthesis. She described the synthesis of polyhydroxylated diterpenoids, such as ryanodol and ryanodine, as well as some alkaloids. Some of the novel techniques she applied were nickel catalyzed asymmetric reductive cross coupling, concise synthesis through straight oxidation, and the coupling of smaller intermediates, instead of straight linear synthesis.

2. C-H Activation continues to be of major interest in both academic and industrial labs. The traditional methods utilized are by directing group assisted activation, base mediated metalation, or free radicals.

A novel approach presented is C-H activation via deprotonative zincation applied selectively to numerous heterocycles. Benzoyl hydroxylamine was used for the introduction of amines and the azide group into non activated arenes.

Corinna Schindler from the University of Michigan described the use of iron(III) catalysts for carbonyl - olefin ring closing metathesis to form 5- and 6-membered carbocycles, *in contrast to Grub's olefin – olefin metathesis*.

A novel selective alkene hydrosilylation catalyzed by bis(amino)amide nickel complexes is highly efficacious with turnover numbers of up to 10,000. Many functional groups are tolerated in the process.

3 . High throughput experimentation for industrial and academic applications was discussed by Melodie Christensen, MerckResearch & Development. While originally developed for the discovery of biologically active compounds, it is now widely used for reaction optimization. High throughput experimentation was successfully applied to enantioselective syntheses, identification of the ideal catalyst, Suzuki – Miyaura cross coupling reactions, and to minimize byproduct formation.

B. Medicinal Chemistry

1. Chronic Neuropathic Pain was the topic for a full morning session. Well over 15 million people in the US suffer chronic pain, and novel, selective medications are urgently needed. Adenosine is known to exert potent analgesia in animal models of neuropathic pain, and in limited clinical trials, in humans. Recent studies have shown that adenosine reduces pain through the A3AR target, and that some A3AR agonists decrease neuropathic pain in models, without analgesic tolerance or side effects from opioid and endocannabinoid based drugs. A number of A3AR agonists for clinical developments have been discovered, but their names or structures were not divulged.

Northwestern University workers have utilized the 4 - endocannabinoid system as a target for neuropathic pain treatment. A number of cannabinergic ligands with good binding and functional properties were discovered which lacked undesirable CNS activities. While Lyrica, the present gold standard for neuropathic pain, does suffer of delayed activity, two of the ligands discovered did not. When injected via a mini-pump long term relief was observed.

Bristol Myers Squibb researchers utilized adaptor associated kinase 1 (AAK1), as a new therapeutic target for neuropathic pain. AAK1 knock-out mice exhibited reduced pain behavior and a reduced neuropathic pain response. 5 - Benzo[c][2,7]naphthyridin-5(6H)-one and 5H-chromeno[3,4-c]pyridine were identified as a possible treatment for neuropathic pain .

2. Chagas disease or trypanosomiasis is an infection caused by the parasite *Trypanosoma cruzi*. It is widely spread in South America and it is estimated that over 2 million people suffer from this disease. No drugs have been approved by the FDA due to serious side effects. Based on X-ray structure analysis, a potent inhibitor named VNI was found effective in mice infected with Tulahuen strain of *T. cruzi*. Using this structural information, another candidate named VFV was identified. It has no toxicity, good bioavailability, and it is not a mutagen. Clinical trials are planned for the near future.

3. Resistant Hypertension.

There are about 76 million people in the US who have hypertension. Minorities of these patients do not respond to any of the medications approved by the FDA, and risk heart failure, or other related diseases.

Aldosterone promotes increased blood pressure. Its biosynthesis is catalyzed by several enzymes including CYP11B2. Small molecule inhibitors of CYP11B2 lower aldosterone concentration and decrease high blood pressure. Researchers at Merck and related organizations synthesized a number of compounds which are CYP11B2 inhibitors. LC1699, the lead candidate, displayed potent and selective inhibition of CYP11B2, dose dependent lowering of aldosterone, good pharmacokinetic properties in the rat and monkey, and good physical properties.

Visit our website www.kalamazooacs.org



Do you have questions, comments, or would like to contribute to this newsletter?
Send an email to Christine Pruis, Communication Chair at ACSkzoo@gmail.com