

Newsletter for the Kalamazoo Local Section of the American Chemical Society

June 1, 2016

Vol. 6 - Issue 4



2016 KACS Executive Officers

Chairperson

Dr. Brian Eklov, Kalexsyn
chair@kalamazooacs.org

Past-Chairperson

Dr. John H. Engelmann, Miller Canfield
jengelma@hotmail.com

Chairperson-Elect

Vacant

Secretary

Angela Willson, WMU, Mallinson Institute
angelamwillson@gmail.com

Treasurer

Dr. Andre Venter, WMU – Chemistry
andre.venter@wmich.edu

Councilor

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

Alternate Councilor

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

Chair's Comments

By Brian Eklov

May was another very busy month for the KACS. A group of members went to Miller Auditorium to see Alton Brown's Eat Your Science Tour on May 5th. Our annual awards gathering was on May 9th, where we honored 50-and 60-year ACS members, awarded students and a teacher of the year, and gave awards to our competitive exam winners. Then, on the 14th, we held a Science Café Field Trip to the Journeyman Distillery in Three Oaks, where we learned a little about the art of distilling from their production staff, and marveled at their analytical chemistry tools! Reports on all of these happenings, as well as reports from the national meeting, and more are below, so read on!

Visit our website

www.kalamazooacs.org



Find us on
Facebook

PLAN AHEAD!

2017 Great Lakes Regional Meeting

The next **Great Lakes Regional Meeting** will be held in Fargo, North Dakota. The Kalamazoo Local Section is part of the Great Lakes Region of the ACS.

Theme: Sustainability and Energy

Location: Holiday Inn, Fargo ND

Date: June 27 – 30, 2017



REPORT

Science Café Field Trip to Journeyman Distillery

By Brian Eklov



Our Science Café Field Trip to Journeyman Distilling in Three Oaks, MI took place on May 14, and was attended by fourteen members and guests of the KACS and nine members of the St. Joseph Valley Local Section. We started with a discussion of the history of the facility, which started out as a featherbone corset and buggy whip factory, and then stood empty for decades before a major restoration effort turned it into a distillery. We then toured their production space, which currently includes a 1000 gallon still which they run for two twelve hour runs each day to collect about 25 gallons of spirit a day! We had a great discussion about the heads, hearts, and tails of the distillation run, and many of us were both amazed and disappointed to find out that all of their analytical chemistry in analyzing their cuts is done by taste! We ended our visit by tasting many of their fourteen bottled spirits, learning a little about proper tasting along the way.



Photos courtesy of Andre Venter and Tom Runge

REPORT

ACS San Diego Meeting

By Gabe Kornis

Dr. Gabe Kornis, a 50-year member of ACS, attended the recent San Diego ACS Meeting. Below is a summary of a few presentations he found of interest. While in California, Dr. Kornis, a Pfizer/Upjohn retiree, attended predominantly the Organic and Medicinal Chemistry sessions at the meeting.

C-H activation and selective derivatizations were topics of many discussions and presentations. A few examples were:

- Highly enantioselective copper catalyzed methods for the hydroamination of olefins whether exocyclic, endocyclic, terminal, or adjacent.
- In olefin metathesis the discovery of new ligand complexes based on molybdenum, tungsten and ruthenium resulted in selectivity for Z-olefins, both in cross and in ring closing metathesis.
- Triple bond metathesis addition reactions to internal alkynes via Au or Pt catalysis.
- A simple new reaction consisting of an activated ester, dialkylzinc, and a pyridine ligand to attach two carbons that each has three other single bonds.

In a memorable lecture, Scott Miller (Yale) discussed catalytic site-selective alterations of complex glycopeptide antibiotics. Vancomycin, the antibiotic of last resort has been associated with multiple drug resistant bacteria. It has nine hydroxyl groups each of which individually were catalytically removed or replaced by other groups. Promising antibacterial analogues were thus made in one or two steps. After many years of traditional research, antimicrobial resistance is causing large numbers of deaths, especially from hospital infections. Drug development in antibacterial compounds suffers a much lower success rate than in most other areas partially due to the lack of novel mechanisms of action. The dose of antibacterials is very high per day due to the lack of rapid diagnostic procedures, the ability of bacterial biomass to grow rapidly hitting several targets, the bacterial membrane which acts as a barrier to the entrance of antibacterials, and the cells ability to flush out whatever drug has gained entrance. To combat the problem two approaches were presented:

1. Penicillins, cephalosporins and carbapenems are targets for beta lactamase leading to loss of activity. A number of compounds are in clinical trial with the aim of replacing clavulanic acid, a known beta lactamase inhibitor.
2. The total synthesis of tetracycline analogues via tandem annulation of precursor ring AB with precursor ring D leading to a large number of compounds some of which show activity against Gram negative bacteria. This is in contrast to semi-synthetic efforts, which provide very few biologically active molecules.

REPORT

43rd Annual Awards Program

By Michael T. Walsh



The Kalamazoo section of the American Chemical Society held its forty-third annual awards program on Monday, May 9, 2016 in the chemistry building atrium on the campus of Western Michigan University. Awardees gathered along with family members, educators, and KACS members at 6pm for a reception with light hors d'oeuvres. The ceremony began at 6:45pm when KACS Chair Brian Eklov formally assembled all in attendance. Award presentations began with ACS 50+ members **Al Blum, Herman W. Smith, and Roger G. Williams** (pictures below). All three spoke briefly of their careers and love of chemistry. Additional 50-year members recognized but unable to attend were **William E. Heyd, Gabe I. Kornis, Thomas L. Miller, and Ekkehard Sinn.**



Next up were the 60-year members! This year we recognized two chemists who have achieved this milestone. Both **David G. Martin** and **Howard A. Whaley** were present and briefly spoke of their professional experiences in the chemistry field (photographs below).



Western Michigan University Chemistry Department honored **Casey Wright** as their outstanding college chemistry student while **Mara Birndorf** was honored with the same distinction from the Kalamazoo College Department of Chemistry (picture below). This year's Outstanding High School Chemistry Teacher Award went to Chris Orlaske of Lawrence Junior-Senior High School.



High school teachers are asked to nominate an outstanding senior chemistry student. This year ten students were recognized. Each **Outstanding High School Chemistry Student** received an Amazon gift card. A list of recipients and the student's high school appears below.



Meredith Adams – Portage Central High School
Garrett W. Amstutz – Paw Paw High School
Jawad Aqeel – Kalamazoo Area Math and Science Center (KAMSC)
Olivia Harlow – Plainwell High School
August Jarzambek – Portage Northern High School
John McKenney – Lawton High School
Hannah McQueen – Gull Lake High School
Bryant Neal – Hackett Catholic Prep
Alex Pease – Kalamazoo Christian High School
Austin Salome – Comstock High School

On April 23, 2016, Sixty-eight students sat for the 2015 **ACS Competitive Scholarship Final Exam**. The top twenty students (this year 22 due to ties) received certificates for their accomplishments and cash prizes! The names of the scholarships award winners and the honorable mention students are listed below.



2015 Competitive Scholarship Winners (pictured above)

- 1st Place - Siddhant Pagariya – KAMSC/Portage Northern - \$600
- 2nd Place - Praneeth Medepalle – KAMSC/Portage Central - \$500
- 3rd Place (Tie) - Meredith Adams – Portage Central - \$400
- 3rd Place (Tie) - Helen Foldenauer – Gull Lake - \$400
- 3rd Place (Tie) - Aheer Alvi – KAMSC/Portage Central - \$400
- 6th Place - Emma Hettinger – Kalamazoo Christian - \$100
- 7th Place - Josiah Turpin – Gull Lake - \$100
- 8th Place (Tie) - Owen Langejans – KAMSC/Portage Northern - \$100
- 8th Place (Tie) - Hannah McQueen – Gull Lake - \$100
- 8th Place (Tie) - Anthony Reo – Paw Paw - \$100



2015 Honorable Mention (11th – 20th place) (pictured above)

The honorable mention students each received a \$50 gift card

Josie Crane – Mattawan	Christopher deGraca Lobo – Portage Northern
Joseph Flanagan – Portage Northern	Skyler Flietstra – KAMSC/Gull Lake
Harvey Flynn – KAMSC/Gull Lake	Austen Ford – Portage Central
Jason Higdon – Mattawan	Rebecca Radomsky – Hackett
Austin Salome – Comstock	Latharia Smith – Loy Norrix
Christopher Vennard – Gull Lake	Cassandra Ward – Loy Norrix

The program ended just before 8pm with two ACS Service awards. Angela Willson, KACS secretary, received the 2016 ACS Committee on Community Activities Local Section Volunteer of the Year Award. James Kiddle, KACS Competitive Exam Chair, received the KACS Local Section Volunteer Award for 2016. Congratulations to both and thank you for everything you do for ACS.



Thanks go to James Kiddle, Lydia Hines, and Brian Eklov for a wonderful awards ceremony

REPORT

Alton Brown Live: Eat Your Science

By Brian Eklov

Our Miller Auditorium outing was to see Alton Brown on May 5th. Twenty members and their guests came out to see Alton Brown talk, sing, and rant. Many of you may know him from his show Good Eats on the Food Network, where he described not only the hows of cooking, but the science whys as well. All said, the three-hour show was entertaining, the music was good, the commentary was sharp, and it isn't every day that you get to watch someone pop popcorn on a searchlight.

REPORT

CGSA and DowBQ Picnics

By Michael T. Walsh and Christine Puis

In May KACS continued its traditions of sponsoring end-of-school-year picnics for two local chemistry student groups. On Friday May 20th, the annual WMU Chemistry Graduate Student Association (CGSA) spring picnic occurred at the Oshtemo Township park on West Main. It was well attended by graduate and undergraduate students, WMU faculty, KACS members, as well as many family members. The weather was perfect for grilling, socializing, and just playing in the park! The Kalamazoo College ACS chapter hosted the annual DowBQ on May 24, 2016, for all of the science community at Kalamazoo College. This end of the year event allows students and faculty from the Biology and Chemistry departments to eat delicious food, mingle, and get to know each other in a casual atmosphere. First years and sophomores had the chance to ask upperclassmen about their Senior Individual Projects (SIPs), classes, and plans for after graduation. Over 180 students and professors attended the event and took time to celebrate the end of the year together.

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