Dear Colleagues:

On behalf of the entire Organizing Committee we welcome you to Grand Rapids in the Mitten State. It is indeed an honor to have you here participating in a full program of **Chemistry: a Grand Enterprise**, which embraces our three thematic areas of Food, Health, and the Environment. We are certain that you will find the varied program of workshops, poster sessions, symposia, social events, and lectures by award-winning industrial and academic presenters stimulating and inspiring.

Our exhibitors and sponsors, both industrial and academic, are situated prominently along your pathway between meeting rooms and we encourage you to interact with them; they are important contributors to the success of the meeting and to the future of our profession. Take advantage also of the Sci-Mix event on Thursday evening when our exhibitors will be at their booths during that poster session.

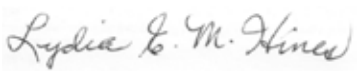
We extend a special welcome to students who are attending and presenting at this meeting; you are our future and we are pleased that you are taking an active role in furthering our science. Some of them are responsible for the undergraduate programming; we appreciate their enthusiasm.

New to his meeting is a forum, to be hosted by current ACS President Dr. Diane Schmidt, which seeks input from industrial chemists on how the ACS can be a catalyst for constructive dialogue between our industrial members and the educational community.

A special honor is to have Dr. Tom Connelly, the brand new Executive Director and CEO of the ACS, present with us on Wednesday and Thursday. This is the very first Regional Meeting of his short tenure (he began his responsibilities at the ACS on February 17) and we are delighted that he placed us on his schedule.

We hope that you plan to attend the Ice Cream Social on Friday afternoon; there you may speak informally with the six members of the Board of Directors who will be in attendance, including our current president and our president-elect, Dr. Donna Nelson.

Thanks for being here! Enjoy the Meeting and may you remember it as one at which you established successful career connections.



Lydia E. M. Hines

Neal M. Fox

Dear Joint Great Lakes/Central Regional Meeting participants,

On behalf of the more than 158,000 members of the American Chemical Society, I am happy to extend my personal greetings to all of you attending the 2015 Joint Great Lakes/Central Regional Meeting in lovely Grand Rapids, Michigan.

With the meeting theme of *Chemistry–A Grand Enterprise*, and with a focus on *Food, Health & the Environment*, the technical program will include highlights such as fermentation, food chemistry, medicinal chemistry, radical reactions in organic synthesis, and undergraduate teaching, among others. Scott Denmark of the University of Illinois, Urbana-Champaign, is the plenary speaker, with Joan Brennecke of the University of Notre Dame and Dustin Mergott of Eli Lilly & Co. delivering keynote addresses.

I look forward to seeing many of you at noon on Thursday where I will be speaking at Women Chemists Committee luncheon. My colleague Bill Carroll will be the speaker at the Younger Chemists Committee at the same time.

Please join your fellow colleagues Friday evening for the Awards Banquet which will feature the presentation of the E. Ann Nalley Regional Award for Volunteer Service to ACS, the ACS Division of Chemical Education Regional Award for Excellence in High School Chemistry Teaching, the ACS Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences, and the newly instituted Partners for Progress & Prosperity (P3) Award, which is given to encourage and recognize successful and exemplary partnerships. ACS Past-President Thomas H. Lane will give the keynote address at the banquet.

With all these events and great symposia, I want to express my special thanks to the JGLCRM cochairs: Lydia E. M. Hines and Neal M. Fox, and to our cohosts: the Kalamazoo Section in the Great Lakes Region and the Western Michigan Section in the Central Region for their hard work and dedication to create a great experience here in Grand Rapids.

Best wishes for a most successful JGLCRM 2015!

Diane Grob Schmidt

Diane Grob Schmidt, Ph.D.
2015 President
American Chemical Society

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Neal M. Fox
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GLR - Great Lakes Region CR - Central Region

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Treasurer
Roger Parker

Central Region Board Steering Committee Meeting

The Central Region Board Steering Committee will have a business luncheon on Friday, May 29, 2015 in Monroe C from 12:00 pm – 1:30 pm

The luncheon is reserved for members of the steering committee and their invited guests only.

2015 Great Lakes Region Board Officers

Chair
Lydia E. M. Hines

Past-Chair
Barbara Moriarty

Treasurer
C. Marvin Lang

Secretary
Susan M. Shih

Great Lakes Region Board Steering Committee Meeting
The Great Lakes Region Board Steering Committee will have a business meeting on Friday, May 29, 2015 in Monroe D from 10:00 am – 12:30 pm

The meeting is reserved for members of the steering committee and their invited guests only.


NSF
NSF SYMPOSIUM PRESENTATIONS
DATE: THURSDAY, MAY 28, 2015
PLACE: DEVOS PLACE CONVENTION CENTER, RIVER OVERLOOK C
8:30 AM – 8:45 AM
Overview of the National Science Foundation
Michelle Jenkins, Program Specialist
Division of Chemistry
8:45 AM – 9:30 AM
Future Faculty, Early Career Faculty, and New Principal Investigator Interactions with NSF Chemistry
Michelle Bushey, Program Officer
Division of Chemistry
9:30 AM – 10:00 AM
Faculty Interactions with NSF Chemistry
Lin He, Program Officer
Division of Chemistry
SESSION BREAK
10:15 AM – 11:00 AM
Undergraduate, Graduate Student, and Postdoctoral Interactions with NSF
Renee Wilkerson, Program Analyst
Division of Chemistry
11:00 AM – 12:00 PM
Programs and Funding Opportunities for Education and Human Resources Development
Nicole Bennett, Program Officer
Division of Undergraduate Education
SESSION END
2:00 PM – 3:00 PM
Open Discussion with NSF Program Staff
Open to all meeting attendees
No registration or prior sign-up required
National Science Foundation • 4201 Wilson Blvd, Arlington VA 22230 • (703) 292-5111

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College of Arts and Sciences
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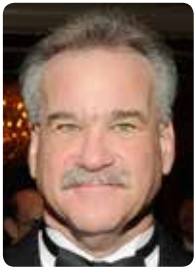
Wayne State

University of Notre Dame College of Science

Western Michigan University College of Arts and Sciences Department of Chemistry

Programming for this meeting was sponsored in part by the Nieuwland Lecture Series of the College of Science of the University of Notre Dame

Plenary Speaker



Prof. Scott E. Denmark
University of Illinois

Lewis Base Activation of Lewis Acids: An Evolving Paradigm for Catalysis in Main Group Chemistry

Wednesday, May 27, 2015, 11:00 a.m. – 12:00 p.m.
Monroe Rooms A-D

Scott E. Denmark was born in New York on 17 June 1953. He obtained an S. B. degree from M.I.T. in 1975 and his graduate studies were carried out at the ETH-Zürich under the direction of Professor Albert Eschenmoser, culminating in a D. Sc. Tech degree in 1980. That same year he began his career as assistant professor at the University of Illinois. He was promoted to associate professor in 1986, full professor in 1987 and then in 1991 named the Reynold C. Fuson Professor of Chemistry.

Keynote Speaker

Prof. Joan F. Brennecke
University of Notre Dame

Title to be announced

Wednesday, May 27, 2015, 5:00 p.m. – 6:00 p.m.
Monroe Room A

Joan F. Brennecke is the Keating-Crawford Professor of Chemical Engineering at the University of Notre Dame and was the founding Director of the Center for Sustainable Energy at Notre Dame. She joined Notre Dame after completing her Ph.D. and M.S. (1989 and 1987) degrees at the University of Illinois at Urbana- Champaign and her B.S. at the University of Texas at Austin (1984).

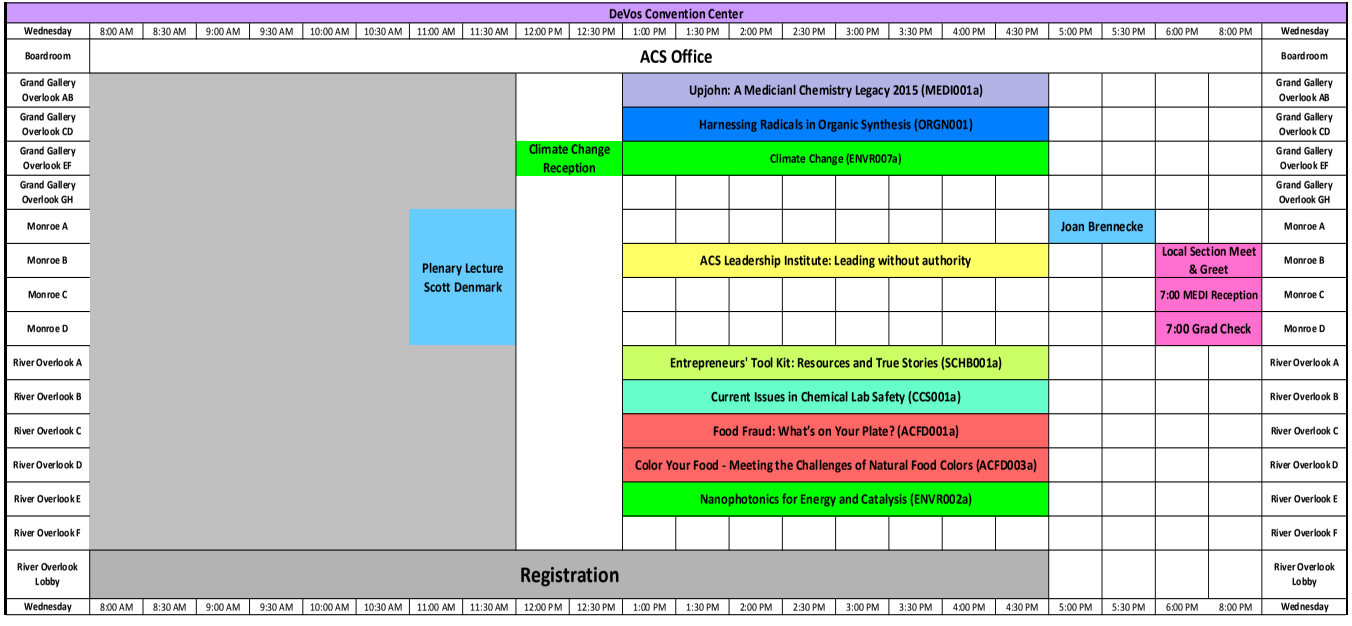
Keynote Speaker

Dr. Dustin Mergott
Eli Lilly

Pursuit of Treatments for Unmet Medical Needs: Current Approaches and Case Studies in Drug Discovery

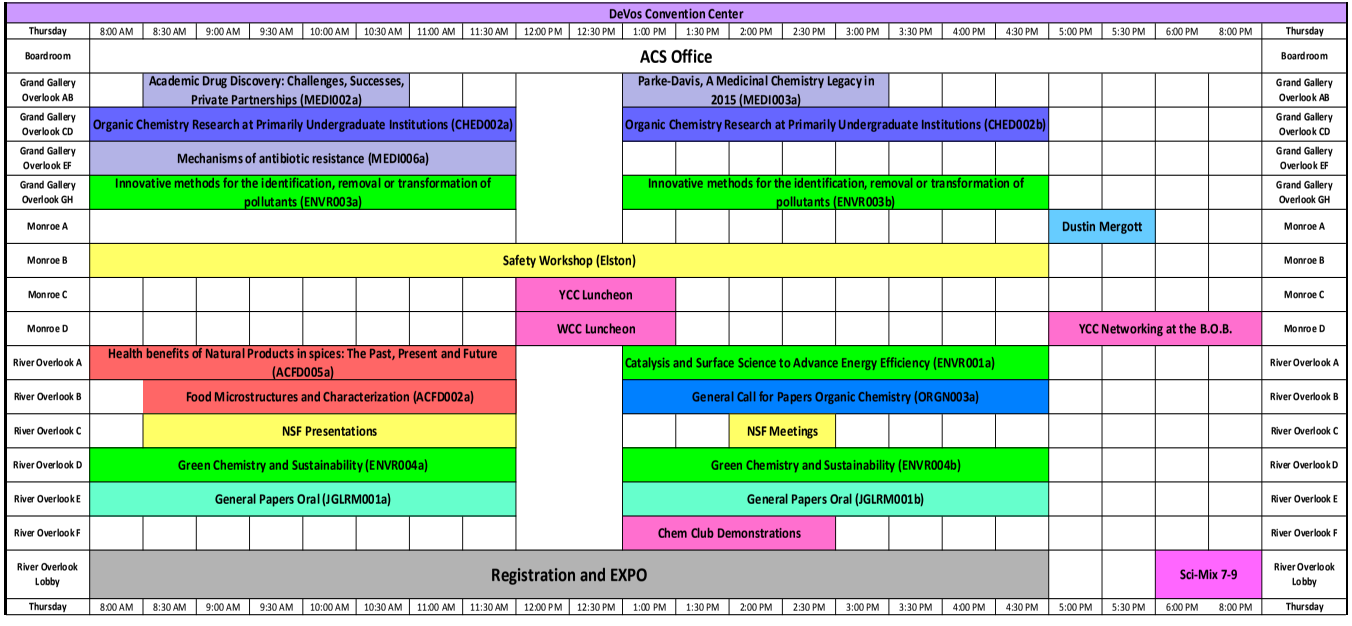
Thursday, May 28, 2015, 5:00 p.m. – 6:00 p.m.
Monroe Room A

Dr. Dustin J. Mergott received his Bachelor's degree in chemistry from Illinois Wesleyan University in 1998. He then received his Ph.D. in organic chemistry in 2004 from the University of Michigan under the guidance of Professor William R. Roush, and subsequently completed a two-year postdoctoral appointment at Harvard University in the lab of Professor Eric N. Jacobsen. Dustin joined Lilly in 2006 where he is currently Principal Research Scientist and Medicinal Chemistry Group Leader. While at Lilly, Dustin's research has focused on Alzheimer's Disease and Oncology.



DeVos Convention Center																									
Wednesday	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	8:00 PM	Wednesday
Boardroom	ACS Office																						Boardroom		
Grand Gallery Overlook AB											Upjohn: A Medicianl Chemistry Legacy 2015 (MEDI001a)												Grand Gallery Overlook AB		
Grand Gallery Overlook CD											Harnessing Radicals in Organic Synthesis (ORGN001)												Grand Gallery Overlook CD		
Grand Gallery Overlook EF									Climate Change Reception		Climate Change (ENVR007a)												Grand Gallery Overlook EF		
Grand Gallery Overlook GH																							Grand Gallery Overlook GH		
Monroe A																			Joan Brennecke				Monroe A		
Monroe B							Plenary Lecture Scott Denmark				ACS Leadership Institute: Leading without authority										Local Section Meet & Greet		Monroe B		
Monroe C																					7:00 MEDI Reception		Monroe C		
Monroe D																					7:00 Grad Check		Monroe D		
River Overlook A											Entrepreneurs' Tool Kit: Resources and True Stories (SCHB001a)												River Overlook A		
River Overlook B											Current Issues in Chemical Lab Safety (CCS001a)												River Overlook B		
River Overlook C											Food Fraud: What's on Your Plate? (ACFD001a)												River Overlook C		
River Overlook D											Color Your Food - Meeting the Challenges of Natural Food Colors (ACFD003a)												River Overlook D		
River Overlook E											Nanophotonics for Energy and Catalysis (ENVR002a)												River Overlook E		
River Overlook F																							River Overlook F		
River Overlook Lobby	Registration																						River Overlook Lobby		
Wednesday	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	8:00 PM	Wednesday		

Meeting at a Glance - Thursday



DeVos Convention Center																								
Friday	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	8:00 PM	Friday
Boardroom	ACS Office																						Boardroom
Grand Gallery Overlook AB		Kinase Drug Discovery (MEDI004a)									Drug Discovery (Contributed Papers Session) (MEDI005a												Grand Gallery Overlook AB
Grand Gallery Overlook CD	Research at Undergraduate Institutions (CHED006a)										Research at Undergraduate Institutions (CHED006b)												Grand Gallery Overlook CD
Grand Gallery Overlook EF	High School, Community College, and Undergradaute Education (CHED004a)										High School, Community College, and Undergradaute Education (CHED004b)												Grand Gallery Overlook EF
Grand Gallery Overlook GH																							Grand Gallery Overlook GH
Monroe A																							Monroe A
Monroe B	ACS Career Pathways: Finding your path											ACS Career Fair: Resume Review											Monroe B
Monroe C													Ice Cream Social								Undergraduate Social Event		Monroe C
Monroe D		Industry Focus Group			GLR Board Meeting (Phone)																		Monroe D
River Overlook A		HIST							CERM Board Luncheon														River Overlook A
River Overlook B		Assessment in Chemical Education (CHED001a)										Assessment in Chemical Education (CHED001b)											River Overlook B
River Overlook C																							River Overlook C
River Overlook D	Ethics Workshop																						River Overlook D
River Overlook E																							River Overlook E
River Overlook F																							River Overlook F
River Overlook Lobby	Registration and EXPO														Undergradautre Poster Session (JGLRM003)								River Overlook Lobby
Friday	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	8:00 PM	Friday
Amway Grand Hotel																							
Pantlind Ballroom																				Awards reception/dinner			Pantlind Ballroom

Thomas M. Connelly, Jr., Executive Director/CEO

Thomas M. Connelly, Jr. is the Executive Director and CEO of the American Chemical Society. Dr. Connelly retired from DuPont in December 2014, where he was Executive Vice President, Chief Innovation Officer. At DuPont, Dr. Connelly led businesses and R&D organizations, while based in the U.S., Europe, and Asia. Dr. Connelly graduated with highest honors from Princeton University with degrees in Chemical Engineering and Economics. As a Winston Churchill Scholar, he received his doctorate in chemical engineering from the University of Cambridge. He has served in advisory roles to the U.S. Government and the Republic of Singapore.

Diane Grob Schmidt, President

Diane G. Schmidt is an Adjunct Professor at the University of Cincinnati in Cincinnati, Ohio. She received an M.S. from the University of Tennessee, and a B.A. in chemistry from the University of Tennessee-Chattanooga. She received her Ph.D. at the University of Cincinnati in Organic Chemistry. Immediately after finishing her Ph.D., she joined the Procter & Gamble Company (P&G), where she served as Section Head with responsibility for safety and regulatory affairs before retiring in 2014.

Donna J. Nelson, President-Elect

Donna J. Nelson is a professor of chemistry at the University of Oklahoma. She received her B.S. in chemistry at the University of Oklahoma and earned her Ph.D. in chemistry at the University of Texas at Austin. She has been a member of the American Chemical Society since 1975.

Ice Cream Social with ACS Governance

Friday, May 29, 2015 @ 2PM
Monroe C

William F. Carroll, Jr., Director-At-Large

Bill Carroll is a vice president of Occidental Chemical Corp. He earned a Bachelor's degree at DePauw University in 1973, Master's Degree from Tulane University in 1975, and Ph.D. from Indiana University in 1978. He has been a member of the American Chemical Society since 1973.

Kathleen M. Schulz, Director–at-Large

Kathleen M. Schulz is the President of Business Results Inc. She earned her Bachelor's degree at Eastern New Mexico University in 1964, and Ph.D. at the University of Missouri in 1973. She has been a member of the American Chemical Society since 1964.

George M. Bodner, Director, District II

George M. Bodner is the Arthur E. Kelly Distinguished Professor of Chemistry, Education and Engineering at Purdue University. He earned his Bachelor's Degree at the State University of New York, Buffalo in 1969 and his Ph.D. at Indiana University in 1972. He has been a member of the American Chemical Society since 1969.

John E. Adams, Director, District V

John E. Adams is a Curators' Teaching Professor of Chemistry at the University of Missouri-Columbia, where he has been a member of the faculty since 1981. He earned his Bachelor's degree at the Rolla campus of the University of Missouri in 1974 and his Ph.D. at the University of California, Berkeley in 1979. He has been a member of the American Chemical Society since 1974.

Wednesday, May 27, 12–4:50 PM • Grand Gallery Overlook EF

"When Facts Don't Matter"

Ron Kramer
Department of Sociology
Western Michigan University

Andrew J. Hoffman
Erb Institute
University of Michigan

Paul Clements
Political Science
Western Michigan University

Don't miss the Reception, Presentations and Panel Discussion!

12:00 PM	RECEPTION	Introducing the "ACS Climate Science Tool Kit"
1:00 PM	Andrew J. Hoffman	How Culture Shapes the Climate Change Debate
1:40 PM	Paul Clements	The Ethics & Politics of Climate Change
2:20 PM	Ronald Kramer	Social Context of Climate Change
3:00 PM	Break	
3:10 PM	PANEL DISCUSSION	How Chemists Can Make a Difference "When Facts Don't Matter"
3:30 PM	Daniel Brown	Climate Change Challenges and Impacts in the Great Lakes Region
3:50 PM	Gretchen Keppel-Aleks	Assessing the strength of climate-biogeochemical feedbacks in a warmer world
4:10 PM	Ryan P. Shadbolt	Climate change in the high elevations of the southern Appalachians
4:30 PM	Nathan J. Moore	Climate Change and the Great Lakes

ACS Leadership Institute: Leading Without Authority

Wednesday 27 May 2015 1:00pm – 5:00pm
Monroe B

In today's environment of shrinking hierarchies and increased reliance on individual contributors and teams, the skills in this workshop are valuable to all members, whether you are in a formal leadership position or not. Members and non-members will be able to use these skills immediately in their work and school environments to better direct and manage projects, teams, committees.

ACS Career Workshops

ACS Career Pathways

Friday 29 May 2015 8:00am – 12:00pm
Monroe B

ACS Career Fair – Resume Review

Friday 29 May 2015 1:30pm – 5:00pm
Monroe B

Effective Chemical Safety Management: A Risk-Based Perspective for the Chemical Hygiene Officer

Thursday 28 May 2015 8:00am – 4:30pm
Monroe B

This workshop will present a detailed analysis of the Chemical Hygiene Officer position for CHOs in both large-scale and small-scale environments. The course will *briefly* cover the relevant regulatory landscape (OSHA Lab Standard and RCRA) and set into best management practices for the Chemical Hygiene Officer. We will discuss:

- Essential reference materials
- Fundamental exposure assessment and control (including ventilation)
- Fundamental risk assessment
- Change management in a research environment
- Basic emergency response and how to stay off the 6 o'clock news.

There will be plenty of opportunity for questions and follow up by e-mail.

Topics covered:

NEW Content for 2015!

- Introduction: What is a "Chemical Hygiene Officer"…really?
  - The regulatory landscape
    - OSHA Lab Standard
    - OSHA General Industry Standard
    - RCRA and Waste Management
    - Your responsibilities
  - Developing Standard Operating Procedures (SOPs)
  - Lunch – on your own
  - Laboratory Hazards and Control
    - Hazard identification and risk management
    - Risk assessment tools:
      - The LabRAT
      - Lab What-If
      - Other tools that may be used
      - Application of the LabRAT and other tools to the research environment
  - Exposure and overexposure in normal operations
    - Evaluating exposure – an overview
  - Controlling change in a research environment
  - Laboratory Emergencies
  - Emergency preparedness
    - The first and second rules of emergency response
    - Spills and spill response
    - Fire and Fire response

"Ask Dr. Safety"

Wednesday 27 May 2015 3:30pm – 5:00pm
River Overlook B

This symposium provides the attendees the opportunity to ask questions and discuss a broad chemical safety topic, such as chemical safety in the secondary school laboratory. This session will explore perceptions and examine ways to solve challenges that secondary school chemical educators frequently face.

Industry Member Input Discussion with ACS President Diane Grob Schmidt

Friday 29 May 2015 8:00am – 10:00am
Monroe D

ACS President Diane Grob Schmidt is hosting a session at the 2015 Joint Great Lakes Central Regional Meeting to hear from industrial chemists on how the ACS could better serve their needs. Topics being discussed will include, but not limited to:

- Safety Training
- Understanding Industrial Goals and Restrictions
- Providing Functions and Facilities after Graduation
- Specific Changes in Education

Ethics Workshop

Friday 29 May 2015 8:00am – 12:00pm
Monroe C

Susan M. Schelble
Metropolitan State University of Denver and Past Chair of ACS Ethics Education Subcommittee (2006-2014)

Barbara Moriarty
Past-chair of the Great Lakes Region Board

The ethics workshop will be an interactive event. Typical ethical situations will be presented as Case Studies. These items have been developed from composites of reported ethical issues from a various jobs in the chemical profession. After each Case Study is presented, the workshop participants will be able to use clickers or smart device technology to vote on the predicted actual resolution of the issue (from a selection of multiple choice options). Often reality is not the best choice. The voting usually generates discussion about finding better resolution, or even how to prevent situations from accelerating out of control.

Data will be collected on the views about common professional values embraced by members of ACS. There will be opportunities for participants to construct their own case scenarios and projected possible resolutions.

Come Join us Thursday Evening for Sci-Mix

Thursday 28 May 2015 7:00 p.m. – 9:00 p.m.
River Overlook Lobby

At Sci-Mix

- Meet the exhibitors
- Enjoy learning about great science
- Refreshments will be served

Also don't forget the

Undergraduate Poster Session

Friday 29 May 2015 3:00 p.m. – 6:00 p.m.
River Overlook Lobby

Come view outstanding research performed by undergraduate students at the poster session. Refreshments will be served.

Wednesday, May 27, 2015

Bridging the Gap - Local Section Celebration **6:00 p.m. – 7:00 p.m.** **Monroe B**

Members of Local Sections of the American Chemical Society are invited to an informal get together to network and make new connections with the aim of increasing collaboration and bridging the gap between our sections. We would especially like to encourage members from the local sections near Kalamazoo including those from Western Michigan, St Joseph Valley, MSU, Huron Valley, and North Eastern Indiana to attend. However members from any other local section are also welcome.

CMU Alumni Reception **6:00 p.m.** **Hopcat**

Hopcat, Grand Rapids (25 Ionia SW) in the upstairs lounge. CMU will provide appetizers. Guests are responsible for their own alcoholic beverages.

Thursday, May 28, 2015

YCC Fun Run **7:00 a.m. – 8:30 a.m.** **Lobby of Amway Grand Hotel**

WCC Luncheon **12:00 p.m. – 1:30 p.m.** **Monroe D**

YCC Luncheon **12:00 p.m. – 1:30 p.m.** **Monroe C**

YCC Networking Event **5:00 p.m. – 8:00 p.m.** **The B.O.B. Brewery**

Friday, May 29, 2015

Ice Cream Social **2:00 p.m. – 3:00 p.m.** **Monroe C**
Come meet members of ACS Governance

Undergraduate Social Event **6:00 p.m. – 9:00 p.m.** **Monroe C**

ACS Awards Reception **6:00 p.m. – 9:00 p.m.** **Pantlind Ballroom Amway Grand Hotel**

All events are at DeVos Place, unless noted.

E. Ann Nalley Award for Volunteer Service to the American Chemical Society

Susan Shih

Ms. Susan Shih was an Adjunct Instructor (1981-1986), Professor (1986-2008) and Department Coordinator (1992-2008) at the College of DuPage where she received the Divisional Outstanding Faculty award (2002-2003). Previously she was an Instructor at Joliet Junior College (1971-1973), and Roosevelt University (1968-1971). Ms. Shih has been an ACS member since 1964 and is currently a full Member of the Society Committee on Education (2009- 2012 Associate). She chairs the SOCED Task Force on Revising the ACS Guidelines for Two Year Chemistry Programs. An active member of the Chicago Local Section, Ms. Shih has served as Councilor (2007-2017), Alternate Councilor (2004-2006), Chair (2002-2003), and served on several local committees, resulting in the Distinguished Service Award, Chicago Section, ACS (2009). Additionally she co-Chaired the 2009 GLRM, chaired the Great Lakes Region Board (2009-2010) and serves as the Secretary for the Great Lakes Region Board. She serves on the DivCHED Long Range Planning committee. Ms. Shih graduated Cum Laude from Rosemont College with an A.B. in Chemistry and was elected to Iota Sigma Pi at The Ohio State University. She completed an M.S. in Inorganic Chemistry from The Ohio State University.

The ACS Division of Chemical Education (CHED) Region Award for Excellence in High School Teaching

Brad Portis, Gull Lake High School

Forty nine years ago, a high school junior who was a geeky student athlete was sitting in his high school Chemistry class and made a rather simple life decision. He was going to be a high school Chemistry teacher and coach. That career choice took him to Michigan State University where he earned a Bachelors of Science Degree in Chemistry while also earning his teaching certificate and minors in Math and Psychology. On his first day of student teaching at Flint Southwestern high school, he was so nervous he locked his keys in the car - while it was still running. His first two years of teaching were at his old high school - Southgate Aquinas – where he was hired without so much as an interview or background check. That is where he also began coaching Cross Country and Track. He taught Chemistry, Honors Chemistry, Physics and a very basic math class. After two years there he sent a few resumes to schools in the Kalamazoo area and he was hired by Gull Lake Community Schools two weeks before his wedding. Brad Portis has been a teacher/coach at Gull Lake High School the last thirty-seven years. He earned a Masters Degree from Western Michigan University in Counseling. At Gull Lake High School he has helped coach five state champions and over a hundred All-State athletes. He has been named Coach of the Year by the Wolverine Conference several times and was a State Finalist for that honor as well. He is a member of the Wolverine Conference Distinguished Service Hall of Fame. Brad Portis has been named the Chemistry Teacher of the Year by the Kalamazoo Section of the American Chemical Society. He earned a similar award from Tri-State University. He was also a state finalist in for Secondary Educator of the Year during the Governor Blanchard administration. All of these awards and accolades are great honors; but it is the achievement of his students that he cherishes the most; he has developed the ability to connect with his students and push them past their comfort

zone. He is intense and demanding, yet also sensitive to individual needs and is inclusive. He offers accommodations for the "borderline" students in order to keep them "in the game". He emphasizes labwork. His students volunteer to assist annually with hands on Chemistry activities during National Chemistry Week celebrations at the Kalamazoo Valley Museum. In 2015 they also helped at the Mind Trekkers' Challenge at Gull Lake Community Schools. Scores of his students have earned scholarship money in the American Chemical Society's Competitive Scholarship Examination (Kalamazoo Section) and three of his students have finished first in that competition over the years. Hundreds of his students have gone on to successful careers around the country as chemistry teachers, medical doctors, nurses, pharmacists....and other careers involving Chemistry. One is now a Professor at Michigan State University! Thanks to current technology, his former students continue to keep connected with him. The toughest class at Gull Lake High School is Advanced Placement Chemistry; but at the end of the year, many of those students say it has also been their favorite class. For education to matter, it must produce a fundamental and enduring change in the individual. It is clear that that is exactly the effect Mr. Portis produces in his students.... year after year.

Stan C. Israel Award for Advancing Diversity in the Chemical Sciences

Tom Higgins

Dr. Thomas B. Higgins is being recognized for his unparalleled dedication to advancing diversity in the chemical sciences and fostering activities to promote inclusiveness in the region. As a professor at Harold Washington community college in Chicago where 82% of student population is comprised of traditionally classified racial and ethnic minorities, he has been a relentless advocate for engaging underrepresented students in research programs and promoting excellence in chemistry education. Dr. Higgins' students have co-authored 15 of his presentations at conferences and 13 of his publications. In addition, he has served as a Principal and Co-Principal Investigator for a total of 10 ground-breaking awards aimed to bring advanced knowledge of chemistry to the City of Chicago community college system students. Dr. Higgins' efforts go far beyond Harold Washington College or even the entire City of Chicago community college system, to enlighten other educators on the importance, challenges, and strategies of engaging chemistry students in minority-serving institutions. Dr. Higgins has made more than 70 local, regional, and national conference presentations, and organized 11 symposia and workshops designed to arm the attendees with the skills necessary to best serve diverse student bodies. Dr. Higgins has demonstrated exemplary service to the American Chemical Society through his work on the Society Committee on Education, the Board Presidential Task Force on Education, Two Year College Chemistry Consortium, Committee on Minority Affairs, the Two Year College Chemistry Guidelines Task Force and Dissemination Task Force, and the Council on Undergraduate Research.

Great Lakes Region P3 Award Winner

Marya Lieberman (St. Joseph Valley Section), Moi University in Kenya and Chemists without Borders

Marya Lieberman earned her BS degree in chemistry at the Massachusetts Institute of Technology, then was awarded a Hertz Predoctoral Fellowship and studied de novo protein design with Tomikazu Sasaki at the University of Washington in Seattle, earning the PhD in 1994. She received an NSF Postdoctoral Fellowship for work in surface chemistry at Caltech with Nathan Lewis. She is currently an associate professor in the Department of Chemistry and Biochemistry at the University of Notre Dame, where she likes to knit tiny potholders out of DNA and cut messages into molecular films using a 2 nm electron beam as a lawnmower. About four years ago, she became interested in the constraints of carrying out chemical analysis in low resource settings and devised a lab-on-paper system to speed up the detection of low quality and fake medicines. These paper test cards are being used to screen hundreds of medications in Kenya and other developing countries. Fast field tests like these are a concrete step towards detection and removal of the very poor quality pharmaceuticals that kill hundreds of thousands of people every year.

E. Ann Nalley Award for Volunteer Service to the American Chemical Society

Heather Juzwa

Heather Juzwa graduated from the University of Pittsburgh in 2000 with an honors bachelors' degree in Chemistry. Since graduation, she has held various sales positions with analytical instrumentation companies. Since October of 2006, she is a Senior Field Sales Engineer at Shimadzu Scientific Instruments. Heather has won numerous awards during her tenure at Shimadzu including Largest Growth Award and Platinum Club. The President of Shimadzu appointed Heather to two Kaizen teams tasked with improving various company practices. Heather's service to the field of chemistry and the ACS began as an undergraduate. She served as the Secretary of the American Chemical Society – Student Affiliates. In 2008, she was Treasurer of the newly formed Younger Chemists Committee. She served as Chair of the Pittsburgh Section of the ACS in 2011 and currently serves as webmaster. Ms. Juzwa's work has led to more uniform reporting for ACS National, earning the section an esteemed ChemLuminary award for Outstanding Large Local Section in 2012. Heather spearheaded efforts to convert The Crucible newsletter from paper to digital. In 2014, Heather served as General co-Chair of the Central Regional Meeting in Pittsburgh in 2014 and received the Distinguished Service Award, the Pittsburgh Section's highest award for service to the society.

The ACS Division of Chemical Education (CHED) Region Award for Excellence in High School Teaching

Richard Samsa, Grove City Senior High School

Richard Samsa attended Mohawk Jr./Sr. High School and graduated as the Salutatorian in 1980. Then he attended Youngstown State University where he graduated Cum Laude in 1984. Since then, he has been teaching Chemistry for 30 years in two Pennsylvania schools. Richard began his teaching career at Purchase Line Jr./Sr. High School where he taught Physics, Applied Chemistry, General Chemistry and Advanced Chemistry for one and a half years. He was also the head Jr. High basketball coach. From there he moved to Grove City High School where he has taught General Chemistry and Advanced Chemistry (which later became AP Chemistry) for 28 years. This year Richard is also teaching one Principles of Science class to freshmen. Richard has been a 7th-grade, Junior-Varsity, and Varsity Assistant Boy's Basketball coach throughout many of those years. He has also been the advisor for Students For Life, Fellowship of Christian Athletes, and the Bible Club over those years. He has published two articles in the Journal of Chemical Education and has presented demonstrations in four different high school and college settings. He is in the process of writing two additional articles that will hopefully be published in the next couple of years.

Stan C. Israel Award for Advancing Diversity in the Chemical Sciences

Mary Barkley

Professor Mary Barkley's career is distinguished by an extensive track record of promoting diversity in the chemical sciences. She has worked to both promoting women and minorities by leading formal committees and acting as Department Chair of Chemistry, as well as by less-formal mentoring efforts. Mary has chaired many committees to address gender inequities. She was particularly pivotal to securing CWRU's NSF ADVANCE grant that created a campus wide program Academic Careers in Engineering and Science (ACES). ACES is transforming the culture of the university so that women want to be faculty in STEM fields. Mary had substantial leadership roles in running the ACES program. Mary was involved in formation of the Flora Stone Mather Center for Women. Mary has served on the "To Tenure and Beyond" workshops aimed at providing mentoring and advice for junior women and minority faculty. Mary, as Chair of Chemistry at CWRU, has promoted diversity and principles and to change faculty attitudes towards diversity. Her efforts has greatly increased diversity in the department, in recent years included the hiring of many women and minority faculty. Mary is actively coaching senior faculty to understand issues surrounding diversity and to the needs of junior faculty. The cumulative positive impact of her efforts to increase diversity in the Chemical Sciences is enormous and hard to calculate.

Central Region P3 Award Winner

Toledo Lucas County Library and the Toledo Local Section of ACS

The Toledo Section ACS initiated/developed a partnership with the Toledo Lucas County Library to bring in chemistry/science authors to their widely acclaimed AUTHORS, AUTHORS and OPEN BOOK forum series. This was a great way to promote science literacy outreach in our community. The Toledo Lucas County Library has proven to be a jewel in the local community and has been an extremely beneficial to opening many new doors.

Wednesday, May 27, 2015

Graduate Student Reality Check **7:00 p.m. – 8:00 p.m.** **Monroe D**

Come join a panel discussion to learn about Graduate School from faculty and current graduate students. Refreshments will be served.

Thursday, May 28, 2015

Chem Club Demonstrations **1:00 p.m. – 3:00 p.m.** **River Overlook A**

Come, see and learn about demonstrations for chemistry clubs. Refreshments will be served.

Friday, May 29, 2015

Undergraduate Poster Session **3:00 p.m. – 6:00 p.m.** **River Overlook Lobby**

Come view outstanding research performed by undergraduate students at the poster session. Refreshments will be served.

Undergraduate Social Event **6:00 p.m. – 9:00 p.m.** **Monroe C**

Saturday, May 30, 2015

Amway Grand Plaza Hotel

Organized by Doris Zimmerman, Kathryn Frantz, Bonnie Buddendeck

Breakfast	**7:30 am**	**Pearl**
Presentations by HS teacher awardees	**8:30-9:30 am**	**Pearl**
Instrument Presentations by Vernier	**9:30 am**	**Vandenberg B**
Snack Break	**10:00 am**	**Pearl**
Hands-on activities	**10:30 - end**	**Pearl**

Presentations by Vernier
Jack Randall, Director of Chemistry

Vernier Mini GC Plus Demonstration
This 30 minute demonstration will focus on the use of the Vernier Mini GC Plus gas chromatograph to investigate a forensics/CSI scenario. We will show how the Mini GC Plus measures and analyzes the components in a mixture of liquids.

Wireless Data Collection with Vernier Sensors
In this 30 minute presentation, you will have an opportunity to collect data wirelessly with Vernier sensors and the LabQuest 2 data collection interface. We will use Data Share, a free wi-fi browser option, to display collected sensor readings into any smart device. In addition, we will demonstrate wireless data collection with iPads and Vernier sensors.

Breakout Sessions
Observations, Modeling, and the Scientific Method/Bringing Science to Life in the Classroom

ACS Chemistry for Life®

YCC

CHEMISTRY: A GRAND ENTERPRISE
FOOD HEALTH ENVIRONMENT
MAY 27-30 2015

Grand Rapids Running Tours

"YCC FUN RUN"

SPONSORED BY

AMERICAN CHEMICAL SOCIETY (ACS) CHICAGO SECTION
YOUNGER CHEMISTS COMMITTEE (YCC)

Thursday May 28, 2015 • 7–8 am
5 K Route Start/Finish right at the Lobby of Amway Grand Hotel Featuring Downtown Grand Rapids

Advance Registration is Required
$20 for students, $35 for ACS runners / walkers
The event is open to public. Non-ACS members are welcome.
The run will be guided by the Grand Rapids Running Tours

— Registration available on JGLCRM website:
http://jglcrm2015.com/–

Questions? Comments? Feedback? Please e-mail the ACS Chicago YCC Chair!
Beau Wangtrakuldee
chicagoacsycc@gmail.com

Chicago YCC is a specialized American Chemical Society (ACS) group dedicated to promoting networking, career and funding opportunities for Younger Chemists (35 and under) in the Chicagoland area. For more information, visit the Chicago YCC Facebook page or Chicago YCC at www.chicagoacs.org

"YCC NETWORKING LUNCHEON"

SPONSORED BY
AMERICAN CHEMICAL SOCIETY (ACS) CHICAGO SECTION
YOUNGER CHEMISTS COMMITTEE (YCC)

Thursday May 28, 2015 • 12–2 pm
Monroe Room C, DeVos Convention Center
Guest Speaker: Dr. Bill Carroll

"Random Thoughts For New ACS Leaders on Careers, Management, and Leadership"

$25* Advance Registration is Required
***Lunch includes soup, a salad entrée, coffee, and tea**

— Registration available on JFLCRM website:
http://jglcrm2015.com/–

Questions? Comments? Feedback? Please e-mail the ACS Chicago YCC Chair!
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ACS Chemistry for Life®

YCC

CHEMISTRY: A GRAND ENTERPRISE FOOD HEALTH ENVIRONMENT 2015

BOB'S BREWERY A RENAISSANCE IN BREWING

"YCC HAPPY HOUR"

SPONSORED BY

AMERICAN CHEMICAL SOCIETY (ACS) CHICAGO SECTION

YOUNGER CHEMISTS COMMITTEE (YCC)

Thursday May 28, 2015 • 5 pm
B.O.B.'s Brewery
20 Monroe Ave NW
Grand Rapids, MI 49503
5 minutes walk from
Amway Grand Plaza Hotel

Join the YCC for great local beer (at a discounted price).
The B.O.B.'s Brewery Mug Club is available for $25 with
$1 off B.O.B. Brews Every Day
$2 off B.O.B.'s Brews During Mug Club
And the good company of the YCC at the JGLCRM!

No Registration is Required. Just join us!!!

— For more information and Beer selection:
http://thebobsbrewery.thebob.com/–

Questions? Comments? Feedback? Please e-mail the ACS Chicago YCC Chair!
Beau Wangtrakuldee
chicagoacsycc@gmail.com

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General Information

All speakers and poster presenters must register and pay the appropriate registration fee to attend the meeting. Invited speakers should contact their symposium organizer to clarify the terms of their invitation. All presenters should prepare for their presentation by verifying the following details: the status of your abstract at abstracts.acs.org (using your ACS ID to log in to the system); mode of presentation (oral or poster); and the time, length, and location of your presentation. If you need to withdraw your presentation, please send a withdrawal notice to pacs@acs.org and contact your symposium organizer immediately.

Oral Sessions

Speakers should arrive in their presentation rooms at least 15 minutes before their scheduled session. Each technical session meeting room will be equipped with the following: LCD projector, screen, podium, laser pointer, and timer. Speakers need to provide their own laptops and necessary connection adapters or arrange for specialty equipment directly with their symposium organizer. Speakers are asked to bring their presentation on a jump drive as well.

Sci-Mix and Undergraduate Poster Presentations

Posters should be 36"x48". Posters will be mounted to Boards in the River Overlook Lobby. There will be two posters mounted to each side of a standing poster board. Presenters must mount their poster 30 minutes before the scheduled session start time. Poster numbers supplied by ACS will be in the upper corner of each poster board and this number corresponds with the number assigned to each poster in the technical program. Pushpins will be available at the poster session. Presenters must remain with their posters for the duration of their scheduled session as indicated in the technical program. All posters must remain up until the session ends and then must be removed immediately following the poster session.

2015 Joint Great Lakes and Central Regional Meeting

May 27 – May 30, 2015

Grand Rapids, Michigan

DeVos Place

James Kiddle and Brian Eklov, *Program Chairs*

WEDNESDAY AFTERNOON

Climate Change

DeVos: Gallery Overlook EF

Cosponsored by CEI

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

1:00 1. How culture shapes the climate change debate. **A. Hoffman**

1:40 2. The ethics & politics of climate change. **P. Clements**

2:20 3. Social context of climate change. **R. Kramer**

3:00 Intermission.

3:10 Panel Discussion: How Chemists Can Make a Difference "When Facts Don't Matter".

3:30 4. Climate change challenges and impacts in the Great Lakes Region. **D. Brown**

3:50 5. Assessing the strength of climate-biogeochemical feedbacks in a warmer world. **G. Keppel-Aleks**

4:10 6. Climate change in the high elevations of the southern Appalachians. **R. Shadbolt**

4:30 7. Climate change and the Great Lakes. **N. Moore**

Color Your Food: Meeting the Challenges of Natural Food Colors

DeVos: River Overlook D

S. T. McDonald, *Organizer*, *Presiding*

1:00 Introductory Remarks.

1:05 8. Natural colors for food and beverages. **D. Dabas**

1:35 9. The multiple colors of anthocyanins: Learning from nature. **M. Giusti**

2:20 10. Betalains as red natural colorants. **D. Dabas**

3:00 11. Color your food: Meeting the challenges of natural color regulations. **S. McAvoy**

Food Fraud: What's on Your Plate?

DeVos: River Overlook C

D. A. Bolliet, *Organizer*, *Presiding*

1:00 Introductory Remarks.

1:05 12. Food fraud prevention and the role of science. (Food fraud: A grand enterprise for criminals). **J. Spink**

1:45 13. Food fraud: A state perspective. **B. Deacon**

2:15 14. Developing meaningful parameters to authenticate polyphenol-rich fruit juice and prevent economically-motivated adulteration. **B.W. Bolling**

2:45 15. Detecting and predicting adulteration in onion oil by gas chromatography analysis and chemometrics. **D.A. Bolliet**, J.E. Guido

3:15 Q&A.

Harnessing Radicals in Organic Synthesis

DeVos: Gallery Overlook CD

Cosponsored by ORGN
Financially supported by Sigma-Aldrich

D. Nagib, *Organizer*, *Presiding*

1:00 16. Free radical approaches to natural product synthesis. **C. Stephenson**

1:40 17. Developing a synthetic toolkit for catalyst-directed C-H functionalization. **D. Nagib**

2:10 18. Isocyanate anion radicals and their cyclotrimerization to isocyanurate anion radicals. **S.J. Peters**, M. Servos, C. Scholtens, J. Klen

2:50 19. Enabling reactivity of neutral aminyl radicals in polycyclic heterocycle synthesis. **J.L. Stockdill**

3:30 20. Enantioselective photocatalytic reactions. **T.P. Yoon**

Nanophotonics for Energy and Catalysis

DeVos: River Overlook E

R. Guda, *Organizer*, *Presiding*

1:00 21. Hybrid nanophotonic materials for enhanced ultrafast optical response and efficient exciton propagation. **G.P. Wiederrecht**

1:30 22. Photophysics of hybrid semiconductor nanowires in photocatalytic hydrogen generation applications. **M.K. Kuno**

2:00 23. Selective encapsulation and extraction of kosmotropic anions from water by self-assembled nanojars. **G. Mezei**

2:30 24. Combined QM/MM study of the isomerization of 1-Deoxy-D-Xylulose 5-Phosphate (DXP) catalyzed by DXP reductoisomerase (DXR). **Y. Mo**

3:00 25. Hydrogen production from water using well-defined nanoparticles to mediate multielectron transfer. **S.O. Obare**

3:30 26. Spatial modulation spectroscopy for imaging single nano-objects. **M. Devadas**, T. Devkota, Z. Li, G.V. Hartland

4:00 27. Conical intersections and non-radiative recombination in semiconductor nanocrystals. **B.G. Levine**, Y. Shu, B.S. Fales

4:30 28. Ultrafast interfacial charge-transfer dynamics in small molecule-modified semiconductor nanoparticles. **R. Guda**

Upjohn: A Medicinal Chemistry Legacy in 2015

DeVos: Gallery Overlook AB

Financially supported by Kalexsyn

M. Barbachyn, J. Fisher, *Organizers, Presiding*

1:00 29. A new class of mTOT-modulating thiazoldinedione insulin sensitizers. **S.P. Tanis**, J.R. Colca, T.T. Parker, L.D. Scott, W.J. Adams, W. McDonald, R.F. Kletzien, J.B. Zeller, G.D. Artman, R.C. Gadwood

1:30 30. Drug discovery at the University of Michigan. **M.J. Larsen**, V.E. Groppi

2:00 31. The University of Michigan Vahlteich Medicinal Chemistry Core: Achieving proof-of-concept in vivo for novel therapeutic hypotheses. **S.D. Larsen**

2:30 32. Cryptospirolepine: Revisiting and revising the structure using modern NMR techniques, DFT calculations, and CASE program capabilities. J. Sauri, W. Bermel, K. Blinov, A.V. Buevich, M.H. Sharaf, P.L. Schiff, T. Parella, T. Williamson, **G.E. Martin**

3:00 33. A novel approach to generating broad-spectrum antifungal drug candidates from the natural product compound aureobasidin A. **A. Elhammer**, P.G. Wuts, L.J. Simons, B. Metzger, R. Sterling, J. Slightom

3:30 34. Nucleoside ribohydrolases as targets for *Trichomonas vaginalis* therapeutic agents. **B.J. Stockman**, S. Beck, S.I. Bekker, A. Benzie, C.S. Humes, S.N. Muellers, I. Rosario, T.A. Shea, V.L. Violo, D.W. Parkin, M.A. Vanalstine-Parris

4:00 35. Discovery of an allosteric JAK inhibitor. **A. Thorarensen**

Current Issues in Chemical Lab Safety

DeVos: River Overlook B

K. P. Fivizzani, *Organizer*, *Presiding*

1:30 Introductory Remarks.

1:35 36. ACS CHAS: Where chemistry and safety meet. **K.P. Fivizzani**

2:05 37. Safety attitudes, awareness, and ethics. **K.P. Fivizzani**

2:25 38. Ask Dr. Safety: Identification and control of reproductive hazards in the laboratory. **H.J. Elston**

Entrepreneurs' Tool Kit: Resources and True Stories

DeVos: River Overlook A

J. Sabol, *Organizer*, *Presiding*

1:30 Introductory Remarks.

1:35 39. Intellectual property for entrepreneurs and chemists. **D. Szostek**

2:05 40. Chemical safety in the commercial sector: The role of MIOSHA. **D. Humenick**

2:35 41. Member benefits, programming, and entrepreneurial activities from the ACS Division of Small Chemical Businesses SCHB. **J.E. Sabol**

3:05 Intermission.

3:25 42. So you want to be an entrepreneur. **J.D. Blizzard**, R. McKellar, J. McMahon

3:55 43. A new scalable educational technology and the I-Corps experience. **N. Glazer**, E. Tratras Contis

4:25 44. Out of the frying pan and into the fire: Leaving your job and starting a career. **J.E. Sabol**

THURSDAY MORNING

Food Microstructures and Characterization

DeVos: River Overlook B

J. Dong, *Organizer*, *Presiding*

8:00 Introductory Remarks.

8:05 45. Protein fibrils: Improved stability and atomic force microscopy characterization. **J. Gilbert**, O.G. Jones

8:35 46. A valine catabolic enzyme could be a potential target for altering the lipid or protein content in an oilseed. **K.A. Rouhier**, A.B. Gipson, M. Pena, R. Rhee

9:05 47. Effects of fats and oils on the microstructure and macrostructure of bakery products. **S. Metin**

9:35 48. Confocal Raman microscopy study of frozen protein solutions. **J. Dong**

General Papers

DeVos: River Overlook E

B. M. Eklov, J. J. Kiddle, *Organizers*

8:00 49. Acylic acid functionalized porphyrins for dye-sensitized solar cells. X. Wang, H. Klfout, M. Salinas, **H. He**

8:20 50. Photophysical and electrochemical properties of novel Mn carbonyl complexes containing substituted phenanthroline ligands. **R.J. Hulme**, D.A. Kurtz, B. Dhakal, G.S. Nichol, G.A. Felton

8:40 51. Re-catalyzed deoxydehydration of diols to olefins using hydroaromatic as reducing agent. **R. Srivastava**, A. Jefferson

9:00 52. Soluble phthalocyanine: Catalyst for selective oxidation of organic sulfides and building block for "molecular panel" MOFs. **S. Jianrattanasawat**, G. Mezei

9:20 Intermission.

9:35 53. Towards multiple electrons transfer Fe^{2+}/Fe^{4+} cathodes for Li-ion batteries. **V. Poltavets**, S.R. Bruno, C. Blakely, J.D. Davis

9:55 54. Improving analysis of proteins by addition of ammonium bicarbonate during desorption electrospray ionization (DESI). **E. Honarvar**, A. Venter

10:15 55. Multiplexed tandem mass spectrometry by modulation of ionization efficiency. **S. Rahbarirad**, A. Venter

10:35 56. Biodegradable poly(e-caprolactone) (PCL)/poly(lactic-co-glycolic acid) (PLGA) fibers and the effect of PLA/PGA ratios on PCL/PLGA phase separation. **R. Ghubayra**, R. Thompson, A.J. Bauer , B. Li

10:55 57. *Candida antarctica* lipase B degradation of poly (ε-caprolactone)/poly (ethylene oxide) blended thin films. **A.J. Bauer**, B. Li

11:15 58. Electrospun poly (e-caprolactone)$_{(70\text{-}90k)}$/ poly-ethylenoxide$_{300}$ fibers. A.J. Bauer , **Z.B. Grim**, B. Li

11:35 59. The molecular architectures of electrospun biodegradable poly(e-caprolactone) (PCL)/poly(lactic-co-glycolic acid) (PLGA) fibers. **R. Thompson**, B. Li, A.J. Bauer , R. Ghubayra

Green Chemistry and Sustainability

DeVos: River Overlook D

Cosponsored by ENVR

S. O. Obare, *Organizer*, *Presiding*

8:00 Introductory Remarks.

8:05 60. An international perspective on green chemistry and sustainability education. **G.M. Bodner**

8:45 61. Using green chemistry for an outreach project in Lehigh Valley to teach kids about protecting the environment. **G.W. Ruger**, J. Berk

9:10 62. Catalytic reactions for sustainable chemistry. **M. Hunsen**

9:35 Intermission.

9:45 63. Beyond ethanol: Electrocatalytic energy upgrading of biomass carbon to liquid fuels. M. Garedew, P. Hao, C. Lam, C. Saffron, **J.E. Jackson**

10:25 64. Metallic and bimetallic nanoparticles as novel surface-enhanced Raman scattering sensors for detection of mercury ions. **A. Bolandi**, A. Eshkeiti, M. Atashbar, S.O. Obare

10:50 65. Self-cleaning surface by growing hierarchical ZnO nanowire coatings on micro-scale PMMA. **J. Li**, L. Wang, Z. Hu, Y. Huang

Health Benefits of Natural Products in Spices: The Past, Present and Future

DeVos: River Overlook A

Cosponsored by MEDI
Financially supported by Sigma-Aldrich

R. Juarez, R. R. Srinivasan, *Organizers*

8:00 Introductory Remarks.

8:05 66. Only culinary?: Early modern medicinal uses of spice. **E. Olbricht**

8:35 67. Potential role of phytochemicals on disease management. **E. Carcache de Blanco**

9:05 68. Development of a natural product as a leukemia differentiation therapy. **D. Wald**

9:35 Intermission.

9:45 69. Triterpenoid chemopreventive molecules from traditional Chinese herbs. **G.P. Tochtrop**

10:15 70. The effect of polyphenols on abeta aggregation. **C. Agatisa-Boyle**

10:35 71. Improving quality control methods for cannabis using flash chromatography. M.J. Wilcox, **J. Marcu**, J.P. Kababick, M. Jacyno, E.M. Pryor

10:55 72. Developments in patent law related to chemical and natural products. **W.A. Ziehler**, **J. Ward**

11:25 Concluding Remarks.

Innovative Methods for the Identification, Removal or Transformation of Pollutants from Run-Off, Storm Water, or Waste Water

DeVos: Gallery Overlook GH

J. Peller, *Organizer*, *Presiding*

8:00 Introductory Remarks.

8:05 73. Recycling waters: Quantitative removal of antibiotic activity in waters using advanced oxidation processes. **S.P. Mezyk**

8:35 74. Chlorine atom reactivity with antibiotics under wastewater treatment conditions. **C. Rice**, S.P. Mezyk

8:55 75. Sulfate radical remediation of pharmaceuticals and carcinogens in DOM containing wastewaters. **T. Reutershan**, S.P. Mezyk

9:15 Intermission.

9:30 76. Kinetics of radical reactions with chloramines in support of recycling wastewater. **K. Couch**, S.P. Mezyk, K.P. Ishida

9:50 77. Molecular ozone and hydroxyl radical effects on *N*-nitrosamine and perfluoroalkyl acid formation during ozonation of treated wastewaters. **J.R. Peller**, A.N. Pisarenko, E. Marti, D. Gerrity, E. Dickenson

10:10 78. Determination of the chlorine distribution in medium chain CPs by deuterodechlorination and NO/CI GC-MS. **R. Mitchum**

Organic Chemistry Research at Primarily Undergraduate Institutions

DeVos: Gallery Overlook CD

J. Wackerly, *Organizer*, *Presiding*

8:00 79. Synthesis and applications of oxaquinonacyclophane macrocycles. **J.W. Wackerly**

8:20 80. Going with the flow: Amide synthesis using a catalyzed flow process. **M.T. Wentzel**

8:40 Intermission.

8:55 81. Rhodium-catalyzed C-C single bond activation: Using mechanistic understanding to guide reaction development. **J.B. Johnson**

9:15 82. Mechanism-driven catalyst modification for lactide ring-expansion polymerization. **Y.D. Getzler**, S.E. Wright

9:35 83. Optically active titanium alkoxides as lactide polymerization catalysts. **B.M. Chamberlain**

9:55 Intermission.

10:10 84. The preparation of EDOT monomers for electrochemical sensing applications. **E.M. Sanford**

10:30 85. Lanthanide and actinide coordination chemistry with multidentate CMPO compounds. **S.M. Biros**, E.J. Werner

10:50 86. Finding light in the darkness: Undergraduate synthesis of fluorogenic sensors. **L. Wysocki**

Mechanisms of Antibiotic Resistance

DeVos: Gallery Overlook EF

R. A. Powers, *Organizer*, *Presiding*

8:30 Introductory Remarks.

8:35 87. X-ray crystallographic structure of BshC: A unique enzyme involved in bacillithiol biosynthesis. **P.D. Cook**

9:05 88. Insights into β-lactam antibiotic resistance in *Staphylococcus aureus* from protein NMR. **J.W. Peng**

9:35 89. The mechanistic basis for the high level of ceftazidime resistance in the C69F variant of the *Burkholderia pseudomallei* PenI β-lactamase. **K.M. Papp-Wallace**, S.A. Becka, M.A. Taracila, M.L. Winkler, J.A. Gatta, D. Rholl, H.P. Schweizer, R.A. Bonomo

10:15 Intermission.

10:30 90. Biochemical and structural analysis of inhibitors targeting the ADC-7 cephalosporinase of *Acinetobacter baumannii*. **B. Wallar**

11:00 91. Allostery in catalysis by penicillin-binding protein 2a of methicillin-resistant *Staphylococcus aureus* (MRSA). **S. Mobashery**

Academic Drug Discovery: Challenges, Successes, Private Partnerships

DeVos: Gallery Overlook AB

J. McGill, *Organizers*, *Presiding*

9:00 92. Drug discovery at the University of Notre Dame: The Warren Family Research Center and the Indiana Drug Discovery Alliance. **R.E. Taylor**

9:30 93. Drugging the undruggable: Therapeutic potential of targeting the protein tyrosine phosphatases. **Z. Zhang**

10:00 94. Purdue moves: Investing in drug discovery. **A.D. Mesecar**

10:30 95. Collaborative engagement in novel therapeutic research & enterprise in Chicago: UICentre (drug discovery @ UIC). **G.R. Thatcher**

11:00 96. HTS to IND-enablement at the Vanderbilt Center for Neuroscience Drug Discovery. **C.W. Lindsley**

11:30 97. A remote-controlled adaptive medchem lab: An innovative model of scientific collaboration to enable drug discovery in the 21st Century. **T. Masquelin**

THURSDAY AFTERNOON

Catalysis and Surface Science to Advance Energy Efficiency

DeVos: River Overlook A

Financially supported by RHK Technologies

D. R. Killelea, *Organizer*, *Presiding*

1:00 Introductory Remarks.

1:05 98. Oxidation reactions on the PdO(101) surface. **J.F. Weaver**, A.R. Asthagiri, F. Zhang, L. Pan, J. Choi, T. Li

1:45 99. Molecular crystals: A different take on surface science. **J.W. Ciszek**

2:05 100. Spectroscopic identification of C_2H_x moieties on Pt(111). **M. Trenary**

2:45 Intermission.

3:05 101. Self-assembly with cyclic hydrogen bonding. **S. Kandel**

3:45 102. Adsorption of atomic oxygen on Ag(111). **J. Derouin**, R.G. Farber, D.R. Killelea

4:05 103. Unusual particle growth at perovskite type electrodes driven by wet electrochemistry at room temperature. **S. Luo**, K.J. Harmon, M. Sardela, R. Haasch, **S. Mitrovski**

4:25 104. Single atom alloys as a strategy for selective heterogeneous hydrogenations. **E.H. Sykes**

5:05 Concluding Remarks.

General Papers

DeVos: River Overlook E

B. M. Eklov, J. J. Kiddle, *Organizers*

1:00 105. Calculation of the anharmonic effect of elementary reactions of high-temperature combustion reaction. **L. Yao**

1:20 106. Novices' and experts' understanding of energy in chemical reactions and processes. **K. Bain**, H. Hamby, M.H. Towns

1:40 107. A simple mechanism for fog formation in the dry-ice-in-water experiment. **T.S. Kuntzleman**, M.E. Ott

2:00 108. General chemistry for engineering students: Integrating the results from industrial ecology studies into the curriculum. **C.J. Donahue**

2:20 109. General chemistry for engineering students: Incorporating results from industrial ecology studies to expand the story of aluminum. **C.J. Donahue**

2:40 110. Faculty approaches to teaching undergraduate physical chemistry courses. **M. Mack**, M.H. Towns

3:00 111. Host-guest nanomaterials: A spectroscopic and computational study of Brooker's merocyanine in modified β-cyclodextrins. **J.S. Holt**, B. Averill, C. Hanson, B. Helmsing, K. Larson, E. Gilbert, M. Repak

3:20 112. The use of chlorine dioxide in the degradation of a series of sulfa drugs. **G.R. Wyllie**, J. Jennissen, A. de Celle

3:40 113. Development of fluorescent sensors for chemoselective visualization of endogenous formaldehyde. **A. Roth**, H. Li, C. Anomra, J. Chan

General Papers: Organic Chemistry

DeVos: River Overlook B

B. M. Eklov, J. J. Kiddle, *Organizers*

1:00 Introductory Remarks.

1:05 114. Chemical probes for studying the mycobacterial outer membrane. **B. Swarts**

1:25 115. Diaminoacenaphthylene: A key but elusive intermediate toward carbonyl-substituted perimidinespirohexadienone photochromes. **A. Prins**, J.G. Gillmore

1:45 116. Intermolecular interactions of halogenated aromatic electrophiles with electron rich arenes: Halogen vs ϖ-ϖ charge-transfer bonding. **S.V. Rosokha**

2:05 117. Reactive intermediate study of solution and solid state photodimerization of cyclopentenone. **R. Ranaweera**, G.K. Weragoda, K.M. Griffin, R. Robinson, J.A. Coffman, E.J. Kidd, F.H. Jesuthasan, J.A. Krause, A.D. Gudmundsdottir

2:25 Intermission.

2:45 118. Tautomerization between the reaction pathways during intramolecular cyclization of heteroenyne-allenes. **S. Rayat**, P. Filby

3:05 119. Vinylnitrene formation from methyl 5-phenylisoxazole-3-carboxylate in solution and in crystal lattices. **R. Ranaweera**, E.J. Kidd, N. Sajkovic, E. McCoy, J.A. Coffman, D. Chapman, F.H. Jesuthasan, J.A. Krause, B.S. Ault, A.D. Gudmundsdottir

3:25 120. Asymmetric synthesis in green solvents: Homoenolate reactions of N-Heterocyclic carbenes. **D.C. Kidd**, J.J. Kiddle

3:45 121. Biomimetic transition metal catalyzed C-H oxidation of organophosphorus compounds. J.J. Kiddle, **J.M. Haroney**

4:05 122. Versatile two-step oxazole synthesis from epoxides. **D.L. Sellers**, L. Kohler, E. Schoffers

4:25 123. The way carbohydrate antigen presented matters: Study of valency and density by polymer platform in cancer vaccine design. **Q. Qin**

Green Chemistry and Sustainability

DeVos: River Overlook D

Cosponsored by ENVR

S. O. Obare, *Organizer*
Ali Bolandi, *Presiding*

1:00 Introductory Remarks.

1:05 124. Hybrid magnetic nanostructures for sustainable antibacterial water treatment. **A.S. Samia**

1:45 125. Calcium oxide as a base in organic synthesis. **D.H. Murray**

2:10 126. Conductive metallophthalocyanine polymer films for supercapacitor applications. K. Klunder, J.T. Yarranton, **T.F. Guarr**

2:35 Intermission.

2:45 127. Inhibition of poly(styrene) thermolysis. **B.A. Howell**, S. Lazar, K. Li, Y. Daniel

3:10 128. Benzoate plasticizers from a biobased hyperbranched poly(ester). **S. Lazar**, T. Zhang, B.A. Howell, P.B. Smith

3:35 129. Thermal and flammability properties of *bis*-phosphorus derivatives of isosorbide. **Y. Daniel**, B.A. Howell

4:00 130. Structural study of Mongolian tourmaline in the electric power saving system with infrared spectroscopy. **K. Chang**

Innovative Methods for the Identification, Removal or Transformation of Pollutants from Run-Off, Storm Water, or Waste Water

DeVos: Gallery Overlook GH

J. Peller, *Organizer*, *Presiding*

1:00 Introductory Remarks.

1:05 131. Saving our bees – removing neonicotinoids from waters using oxidizing radicals. J.J. Kiddle, **B. Daws**, S.P. Mezyk

1:35 132. The use of filamentous fungi to reduce the negative environmental impact of animal solid waste and convert it into consumable products. **J. Schoer**, M. Watters, Z. Zhang, A. Zapata, E. Phillilpi, J. Yablonowski, B. Mitchell, M. Przybyla, J. Wunderlich

1:55 133. Standard heats of oxidation for characterized soils in the remediation of chemically-contaminated waters. **N. Moulton**, S.P. Mezyk, M. Becker

2:15 Intermission.

2:30 134. Growth of sparingly-soluble minerals: The effect of varying solute cation:anion ratio. **J. Bracco**, S.R. Higgins, A.G. Stack

2:50 135. Creating meaningful datasets to identify stressors on the quality of surface and ground waters of Northwest Indiana. **H. Bharatia**, D.N. Kelly, E. Argyilan, J.R. Peller

3:10 136. Radiolysis studies to determine rate constants and reaction products of 4-methylcyclohexane methanol and propylene glycol phenyl ether with the hydroxyl radical in water. C. Zhao, **J.R. Peller**, P.V. Kamat, S.P. Mezyk, K.E. OShea

Organic Chemistry Research at Primarily Undergraduate Institutions

DeVos: Gallery Overlook CD

J. Wackerly, *Organizer*, *Presiding*

1:00 137. Boron tribromide facilitated ether cleavage: An old dog with new mechanistic understanding. **A.L. Korich**, R.L. Lord

1:20 138. Modified Sonogashira- and Glaser-type couplings: Reaction methodology for undergraduate research. **M.J. Mio**

1:40 Intermission.

1:55 139. Stereoselective synthesis of cyclopentanoid monoterpene natural products and the elucidation of their roles as insect semiochemicals. **J.E. Hofferberth**, S. Adler, C. Fischman, I. Weiss, J. Ruther, J. Stökl

2:15 140. New methods for the synthesis of *N*-substituted 2-pyridones. **C.E. Anderson**

2:35 141. Progress towards the development of a novel aza-Petasis Ferrier rearrangement. **T.L. Troyer**, K. Springer, J. Handtke

2:55 Intermission.

3:10 142. Sodium borohydride reduction of methylcyclohexanone positional isomers. J.B. Friesen, **R. Kieffer**

3:30 143. Combining research with undergraduates in the organic chemistry laboratory. **L. Ahlberg**, D.H. Murray

3:50 144. Enhancing student engagment in organic chemistry through POGIL. **L.L. Zart**

Parke-Davis: A Medicinal Chemistry Legacy in 2015

DeVos: Gallery Overlook AB

P.L. Toogood, *Organizers*, *Presiding*

1:00 145. The story of Protease-X. M. Le Naour, X. Zhao, L. Kotilinek, K.M. Nelson, J. Strasser, M. Cuellar, P. Liu, C. Wilmot, K.H. Ashe, **M.A. Walters**

1:30 146. A search for novel rifamycins and small molecule leads against *M. tuberculosis* RNA polymerase. **H.D. Showalter**

2:00 147. The exploration and development of narrow spectrum cephalosporins for the treatment of bovine and swine respiratory diseases with reduced activity against zoonotic pathogens. **E. Ellsworth**

2:30 148. Restoring immune balance through modulation of immune metabolism and cytokine networks. **P.L. Toogood**

THURSDAY EVENING

Sci-Mix

DeVos: River Overlook Lobby

B. M. Eklov, J. J. Kiddle, *Organizers*

7:00 - 9:00

149. Influence of agricultural pesticides on nanoparticle stability. **N.M. Dissanayake**, S.O. Obare

150. Selective detection of toxic organphosphates using novel fluorophores. S.O. Obare, **J.T. Wabeke**, M. Fahey, D.E. Harper

151. Total phenolic acid and total flavonoid content in thimbleberries (*Rubus parviflorus*). **B.M. Canfield**, **M. Gariepy**

152. Development of flow cell technology for aqueous organic electrolytes. **E. Peters**, J. Schroeder, W. Schroeder, J. Sheridan, P. Rasmussen, A.W. Lantz

153. Dried blood spot analysis using isotope dilution mass spectrometry. **L.T. Miller**, S.J. Wetzel, H.M. Kingston

154. SERS detection on a stable silver nanoparticle imbedded polymer film. **H. Madupalli**, M.M. Tecklenburg, B. Russel

155. Spatial modulation spectroscopy of single gold nanorod in an optical trap. **Z. Li**, M. Devadas, W. Mao, G.V. Hartland

156. Amine and phosphine salts of phytic acid. **A. Dembski**, B.A. Howell

157. Cardanol as a renewable biosource for phosphorus flame retardants. **A. Lee**, B.A. Howell

158. Flame retardants from the natural oil, oleic acid. **G. Lienhart**, B.A. Howell

159. Identification of biodegradation products of the ionic liquid 1-butyl-3-methylimidazolium chloride by liquid chromatography-mass spectrometry (LC-MS). **W.A. Alisawi**, S. Rahbarirad, K.M. Docherty, A. Venter

160. Nanoparticle-based binary hierarchical systems for sustainable chemistry processes. **S.O. Obare**, **H.A. Al- Zubaidi**, R. Ozer

161. Oligomeric flame retardants from itaconic acid. **V. Hill**, B.A. Howell

162. Phosphorus flame retardants from the Biophenol, Phloroglucinol. **C. Schmaltz**, B.A. Howell

163. Phosphorus flame retardants from the renewable biomaterial, Castor Oil. **E. Ostrander**, B.A. Howell

164. Undecenoic acid as a base for the generation of flame retardants. **S. Cvetrovski**, B.A. Howell

165. A computational study of the mechanism for azoarene formation from azides by iron alkoxides. A.C. Cabelof, J. Bellow, M. Yousif, S. Groysman, **R.L. Lord**

166. Binuclear complexes: Analogs for Cu_A binuclear centers of redox reactions with cytochrome C oxidase - Modeling oxygen reduction for enzyme substrate binding studies. **J.W. Kreft**, **E. Sinn**

167. BODIPY sensitizers for dye-sensitized solar cells. **H. Klfout**, X. Wang, **H. He**

168. Cr^{3+} and Sn^{2+} detectors. **R. Madawala**, E. Sinn

169. Fe(I) and Re(I) carbonyl mediated unactivated olefin couplings: Experimental and computational studies for new practical analysis and synthesis. **D. Chong**, J.P. May, J.W. Tye, W.E. Geiger

170. Fluorine doped tin oxide as corrosion protection for water oxidation photoanode. **K.J. Lambright**, A.L. Stuart, X. Deng, D. Giolando

171. Local spin analyses using density functional theory. **B. Abate**, J. Peralta

172. Rhenium-based organometallic catalysts for CO_2 reduction. **B.D. Terry**, B. Dhakal, G.A. Felton

173. Salt-mediated assembly of bimetallic nanoshells into monolithic aerogel frameworks. **K.S. Ranmohotti**, X. Gao, I.U. Arachchige

174. Syntheses and characterization of ferrocenophanes. **M.T. Joudah**, **C.A. Calvary**, **B.M. Wilson**, **M.P. Castellani**

175. Phylochemical approach for the development of broad spectrum coronaviral 3C-like protease inhibitors to target emerging human pathogens. **S.E. St. John**, A.D. Mesecar

176. Structure-activity-relationship of antioxidant dendrimers. **U.G. Huynh**, C.Y. Lee, R. Held

177. Synthesis of substituted pyrazolines as inhibitors of *Staphylococcus aureus*. **T.K. Drinnon**, C. Fullenkamp, R.R. Pelly, S. McDowell, R.E. Sammelson

178. An investigation of the reactivity of 2° amines with 2-aryl-1-methylpyridinium salts. **R. Alkahtani**, **A. Jacobs**, P.A. Albiniak

179. An investigation of the reactivity of 2-allyloxy-1-methylpyridinium triflate with oxygen nucleophiles. **C. Culy**, **A.R. Baker**, P.A. Albiniak

180. Biological evaluation of the vaccine candidate TF-PS A1 and a one-pot multicomponent coupling/cyclization for natural product herbicide (±)-thaxtomin A. **J. Bourgault**, P.R. Andreana

181. Carbon-carbon single bond activation and cross-coupling with Michael Acceptors. **E.J. Phipps**, J.K. Kirsch, C.E. Gregerson, J.B. Johnson

182. Chairs!: A mobile game based on cyclohexane conformers. **J. Winter**

183. Excited state intra-molecular proton transfer of aromatic Schiff bases in triplet surface using transient spectroscopy and DFT calculations. **G.K. Weragoda**, A.D. Gudmundsdottir, J. Grabo

184. Formation of a trimeric calix[4]arene by self-assembling with a template. Z. Yan, **E. Brown**

185. Green protection of pyrazole, thermal isomerization of tetrahydropyranylpyrazoles, and high-yield, one-pot synthesis of 3(5)-alkyl- and 3,5-dialkylpyrazoles. **B.M. Ahmed**, G. Mezei

186. Incorporation of boronic acids in cross-coupling reactions proceeding through C-C activation. **J.M. Dennis**, C.T. Compagner, J.B. Johnson

187. Late-stage cyclization approach to 1,3-thiazole-2-carboxylate esters and applications to liquid crystal synthesis. **S. Carney**, A.J. Seed, P. Sampson

188. Luminescent pyridine compounds: Spectral, electrochemical, and photochemical properties. **S. Oren**, K. Olson, A. Petty, T.F. Guarr

189. Mechanistic study on cis trans isomerization via biradical formations. **D.M. Sriyarathne**, A.D. Gudmundsdottir

190. Mesogenic 1,2,4-oxadiazoles. **F. Fouad**

191. Photochemistry of 2-(azidomethyl)benzophenone, mechanism via enol intermediates. **K.R. Thenna Hewa**, A.D. Gudmundsdottir, S. Muthukrishnan

192. Promoting catalysis and expanding the scope of organometallic nucleophiles for the nickel-mediated decarbonylative cross-coupling of substituted phthalimides. **K. DeGlopper**, M.C. Yoder, M.R. Kwiatkowski, J.B. Johnson

193. Stable organic redox shuttles for overcharge protection in lithium batteries. **N. Mortimer**, R. Polik, M. Gregory, N.R. Boersma, T.F. Guarr

194. Statistical analysis of tobacco for country of origin via 1H-NMR and multivariate component analysis. **D.L. Paredes**, C. McCleave, J.A. Bjorklund, N.L. Peterson

195. Study of a Quinone Based Photo Removable Protecting Group and the proposed mechanism of photorelease by radical rearrangement. **O. Osisioma**, A.D. Gudmundsdottir

196. Synthesis of amides from anilines and nitriles using a catalyzed continuous flow reactor. **A. Julkowski**, M.T. Wentzel

197. The effects of directing groups in rhodium catalyzed decarbonylation reactions. **C.J. Pratt**, C. Kozack, J.B. Johnson

198. A comprehensive year-long study of the water quality parameters in the lower Rouge River in southeastern Michigan, USA. **A.A. Bazzi**, J. Bazzi, M. Ayyash, M. Meszaros, E. Hardy

199. A technology-rich kinesthetic approach for teaching and learning. **N. Glazer**, E. Tratras Contis, Y. Glazer

200. Antiproliferative effect of resveratrol in rat endothelial Cells (RAMEC) is dependent on the post-translational modification of VACM-1/cul5 by NEDD8. **C.A. Breit**, M. Burnatowska-Hledin

201. Broad spectrum assessment of the epitope fluctuation - immunogenicity hypothesis. **J.S. Grosch**, J. Yang, A. Shen, Y. Sereda, P. Ortoleva

202. Characterizing 18th-century glues on ceramics from Ferry Farm, George Washington's boyhood home. **D.M. Fraser**, R. Armitage, M. Kaktins

203. Cigarette butt leachate toxicity in freshwater aquatic invertebrates. **S. Viano**, **M. Schmidt**, A. Goblirsch, B. Maschmeyer, T. Bennin, A. Jones, R.B. Dowd

204. Computational analysis of the stereoselective synthesis of pyrrolidines. **D. Jones**, M. Milletti

205. Computational modeling of the interaction between PAI-1 and a small molecule inhibitor. **C. Baumer**, M. Milletti

206. Consequences of chloromethane (R40) mixed in with tetrafluoroethane (R134a); production of trimethylaluminum, reactivity of TMA and various refrigerant oils and methods to deactivate trimethylaluminum. **Z. Chen**

207. Design and synthesis of nitrogen rich porous organic polymers. **M. Rabbani**, J. Heitsman, B. Roe, A. Moore, M. Boushley

208. Developing a universal Steric Trapping strategy for studying folding and stability of helical membrane proteins. **R. Guo**

209. Election of ACS directors-at-large by a minority of voters in five of the last six years: A possible solution to the problem, multiple instant run-off voting. **W.L. Dilling**

210. Enantiodifferentiating [4+4] photocyclodimerization of 2-Anthracene-carboxylate catalyzed by 6^A,6^X-Diamino-6^A,6^X-dideoxy-γ-cyclodextrins: Misinterpretation of the sign of differential entropy of activation. **W.L. Dilling**

211. Enhanced chemistry learning through instrument access and personalized secondary educator training (ECLIPSE): A high school chemistry teacher workshop. **B. Wile**, C. Bowers, T.M. Perrine, C. Spiese

212. Examining the strength of interactions between PAI-1 and a potential inhibitor. **B.M. Jewell**, M. Milletti

213. Excited-state relaxation dynamics of highly luminescent glutathione-protected gold clusters. **V.D. Thanthirige**, K. Pyo, K. Kwak, D. Lee, R. Guda

214. Exploring the effect of an electron-withdrawing substituent in an aza-Cope – Mannich reaction. **A.S. Durden**, M. Milletti

215. Generality of kinase-catalized biotinylation: A tool for kinase cell signaling pathway analysis. **D. Embogama**, C. Senevirathne, M. Pflum

216. How to report the results of an instant run-off election. **W.L. Dilling**

217. Implementation of globally harmonized labels and their impact on the laboratory. **A. Kemperman**

218. Linear and nonlinear optical properties of chromophore-functionalized graphene oxide nanostructures. **A. Abuhagr**, S. Jianrattanasawat, G. Mezei, R. Guda

219. Microwave-assisted synthesis of alkanethiols from alkyl halides. A.S. Butron, **T.B. Higgins**, R. Richter

220. Modeling interactions between PAI-1 and inhibitor: Combining molecular dynamics and density functional theory. **M. Sadowsky**, M. Milletti

221. Molecular dynamics simulations of *N*-acetyl-α-d-glucosaminyl l-malate synthase to explore putative ligand binding sites. **P. Egeler**, P.D. Cook, M. Karpen

222. Natural anthraquinone dyes and dye mixtures: Microwave synthesis and characterization by direct analysis in real time (DART) mass spectrometry. **S. Augustin**, T.L. Friebe, R. Armitage

223. Photoactivatable chemical probes for studying the mycobacterial outer membrane. **J.A. Stewart**, B.M. Swarts

224. Polymer matrix composites using covalently modified carbon nanotube materials. **J.S. Baker**, M.A. Meador

225. Preparation and characterization of nitric oxide releasing silicone rubber materials/catheters impregnated with *S*-nitroso-tert-dodecylmercaptan. **A. Ketchum**, M. Kappler, J. Wu, M.E. Meyerhoff

226. Progress toward the syntheses of novel monocyclic β-lactam antibiotics. **S. Carosso**, M.J. Miller, S. Hecker, T. Glinka

227. Protein cross linking of tyrosinase and tyrosine decarboxylase for preparation of halogenated dopamine analogs as substrates for precursor directed biosynthesis. **J. Fauser**, G. Gillespie, J.J. Maresh

228. Quality comparisons of prepared formulations. **A. Kemperman**, N. Fox

229. Quantification of chromium in biological matrices. **J. Arroyo**, M. Schmeling, J. Batycki

230. Red dyes in North and South American archaeological textiles by DART-MS. **R. Armitage**, K.A. Jakes

231. Structure and function of rotavirus non-structural protein 6. **N. Jandaghijafari**, B. Szymczyna

232. Student research proposal projects in an advanced topics in environmental chemistry course. **A.M. Reinsel**

233. Study and control of the magnetic and mechanical properties of polyethylene-iron oxide nanocomposites. **S.F. Situ**, A.S. Samia

234. Synthesis and characterization of trimetallic Cu(I), Au(I) and Ag(I) complexes. **A. Samin**

235. Synthesis of dopamine analogues for precursor directed biosynthesis of novel drug candidates. **A. Ralko**, J.L. Burke, T. Speltz, M. Aparece, J. Girel, Z. Gaskell, C. Richtscheidt, G. Gillespie, C. Murphy, G. Perez, J.J. Maresh

236. Tekhelet, the evolution of an ancient dye molecule. **B.W. Baldwin**

237. The effect of a bulky vinylic substituent on the stereoselectivity of an aza-Cope Mannich reaction leading to substituted pyrrolidines. **A.E. Winkler**, M. Milletti

238. The influence of fluorine atoms in the structure and dynamics of monofluoroacetylacetone. **M.A. Muyskens**, B. De Vries

239. The RNA-binding mechanism of rotavirus nonstructural protein 3. **H. Chanzu**, B. Szymczyna

240. Toward targeted therapeutics for renal disease: Discovery of small molecule inhibitors of Pax2. **E.C. Grimley**, C. Liao, E. Ranghini, Z. Nikolovska Coleska, G. Dressler

241. Two-photon absorption properties of chromophores in polyelectrolytes. **M.R. Bin Hatshan**, R. Guda

242. Two-photon spectroscopy to minitor folding and aggregation of Cu, Zn Superoxide Dismutase-1. **N. Goenawan**, **Z. Mo**, M.R. Hatshan, R. Guda

243. Using the "One-Room Schoolhouse Model" as a method of introducing undergraduates to research. **K.A. Glover**, S. Malapati

244. Vibrational spectroscopy of asparagine in acidic, neutral, and basic solutions. **D. Dandurand**, **J. Shin**

245. Synthesis and characterization of boronated biomolecules as boron neutron capture therapy (BNCT) delivery agents. **T.R. Sibakoti**

246. Phenanthrene derivatives as sensor templates for the detection of nerve agents. **D.L. Sellers**, J. Whitcomb, L. Kohler, E. Schoffers

247. The directionality of non-covalent bonds. **Y. Mo**

248. Water adsorption on Pt(111) and stepped Pt surfaces. **R.G. Farber**, D.R. Killelea, L.B. Juurlink, M.J. Kolb

249. Acid leaching of metals from ceramic glazes. B. Ploetner, **K. Weber Stickney**

FRIDAY MORNING

High School, Community College, and Undergraduate Education

DeVos: Gallery Overlook EF

T. B. Higgins, *Organizer*, *Presiding*

8:00 Introductory Remarks.

8:05 250. Bonding positive interdependence with guided inquiry: Building the learning team. **U. Halliday**

8:25 251. Development and implementation of a summer camp for high school students based on the applications of analytical instrumentation in forensic chemistry. **J.H. Batten**

8:45 252. High school, community college, and undergraduate education: Issues of dual enrollment, hybrid and online chemistry courses. **B. Barot**

9:05 253. Development of an online introduction to chemistry course-novice to novice. **L.A. Bolyard**, **S.J. P'Pool**

9:25 254. Interactions with local high schools by the University of Detroit Mercy Chemistry Club (SMACS). **M.J. Mio**, M.A. Benvenuto, T.M. Dierker

9:45 Intermission.

10:00 255. Promoting pro-environmental behaviors in students and their families by connecting the chemistry classroom to blended learning experience. **P.L. Daubenmire**, **M.T. van Opstal**

10:20 256. Community building between high school and undergraduate institutions: How ACS resources can help. **B. Hall**, N. Di Fabio, N. Bakowski

10:40 257. Engaging resources from the *Journal of Chemical Education & ChemEd X*. **D. Cullen**

11:00 258. Incorporation of hands-on gas chromatography-mass spectrometry into a one-year general chemistry curriculum. **B. Liburd**

11:20 259. Integrating gas chromatography-mass spectrometry into organic chemistry to improve student interest in and skill with this technique and beyond. **J.H. Batten**

11:40 260. Integrating research into the STEM classroom with high altitude ballooning. **B. Beck-Winchatz**, M. Davis, T.B. Higgins

Research at Undergraduate Institutions

DeVos: Gallery Overlook GH

B. Wile, *Organizer*

8:00 Introductory Remarks.

8:05 261. Results from an external review of the Kenyon College Summer Scholars Program: An ongoing discussion between faculty and administration. **K.A. Rouhier**

8:25 262. Initiating a new undergraduate research program in environmental chemistry at a predominantly undergraduate institution. **L.H. Mielke**, L. Harper, M. Simpson, A. Couto, T. Huynh, J. Kaur, E. Curry, M. Garreth, J. Houchins

8:45 263. Developing ion parameters using shared GPU accelerator hardware. **J.C. Dood**, B.P. Krueger

9:05 Intermission.

9:25 264. Diamine bis(phenolate) and pendant amine bis(phenolate) complexes of palladium as catalysts for the Suzuki-Miyaura coupling reaction. A. Bowser, A. Anderson-Wile, **B. Wile**

9:45 265. Synthesis, characterization, and catalytic activity of iron complexes supported by BIAN ligands. **H.M. Hoyt**, M. Supej, K.A. Wheeler, C.E. Schulz

10:05 266. Development of a green problem-based learning dibromination of alkenes. **C.E. Wright**, J.J. Kiddle

10:05 Concluding Remarks.

Assessment in Chemical Education

DeVos: River Overlook B

F. Burns, *Organizer*, *Presiding*

8:30 267. Finding motivation and inspiration in assessment work. **C. Rener**

9:00 268. Development of the INQUIRE (INstilling QUantitative and Integrative REasoning) program. **S.M. Cass**

9:20 269. Use of a salting out demonstration to change instruction by analyzing student misconceptions of intermolecular forces. **K.L. Rowberg**

9:40 270. Assessing higher order thinking skills through creative writing. **F. Burns**, D.V. Frank, J. Asare, L. Clark

History of Chemistry

DeVos: River Overlook A

S. C. Rasmussen, *Organizer*, *Presiding*

8:30 Introductory Remarks.

8:35 271. The race to discover Element 61. **V.V. Mainz**

9:05 272. Historical overview of bismuth: From metallurgy to modern applications. **N. Balasubramanian**

9:35 273. Robert Lewis Letsinger: A life in chemistry. **M.E. Schott**

10:05 Intermission.

10:20 274. Fifty year retrospective on the synthesis of corannulene. P.G. Rasmussen, **R. Lawton**

10:50 275. On the origin of 'synthetic metals': Herbert N. McCoy, Alfred René Ubbelohde, and the development of metals from nonmetallic elements. **S.C. Rasmussen**

11:20 Discussion.

Kinase Drug Discovery

DeVos: Gallery Overlook AB

M. Barbachyn, J. Fisher, *Organizers*, *Presiding*

9:00 276. Discovery of Palbociclib: The first-in-class CDK4/6 inhibitor for breast cancer. **D.S. Johnson**

9:30 277. Structure and allosteric kinase regulation of AMPK. **K. Melcher**

10:00 278. Computational study of the specificity of protein kinase inhibitors. **Y. Meng**, B. Roux

10:30 279. Tricyclic kinase inhibitors. **K.E. Frank**

11:00 280. Discovery of a novel interleukin-1 receptor associated kinase-4 (IRAK4) inhibitor scaffold. **D. Romero**, S. Robinson, M.D. Wessel, J. Greenwood, s. watts, M. Shelley, L. Frye, D. Chaudhary, R. Kapeller

11:30 281. Detecting anaplastic lymphoma kinase activity by a time-resolved luminescence biosensor assay. **W. Cui**, L. Parker

FRIDAY AFTERNOON

Drug Discovery

DeVos: Gallery Overlook AB

M. Barbachyn, J. Fisher, *Organizers, Presiding*

1:00 282. Identification of natural products sources for inhibition of the enzyme protein tyrosine phosphate 1β (PTP1β): Drug discovery initiative for obesity and type II diabetes mellitus. **S. Buddha**, M. Siodlak, A. Kojda

1:20 283. Inhibition of a human erythrocyte tyrosine kinase entraps the malaria parasite and terminates its proliferation. **K.R. Kesely**, P.S. Low, A. Pantaleo, F. Turrini, H.D. Chien, P. Oluput

1:40 284. Selective Estrogen Mimics (SEMs) for the treatment of tamoxifen resistant breast cancer. **H. Patel**, R. Xiong, L. Gutgesell, J. Zhao, M. Molloy, D. Tonetti, G.R. Thatcher

2:00 285. New multinuclear NMR methods for solid pharmaceuticals: Drugs and dosage forms. **R.W. Schurko**, M.J. Jaroszewicz, A.M. Namespetra, A.M. Sandre, M. Hildebrand, H. Hamaed, S.L. Veinberg, K. Johnston, L. Frydman, M. Pruski, T. Kobayashi, I. Hung, Z. Gan

2:20 286. Cold ion spectroscopy: A novel method for directed drug discovery. **N. Burke**, S.A. Mcluckey, T.S. Zwier, A. DeBlase

2:40 287. Synthesis and anti-proliferative activity of *N,N'*-bis(arylmethyl)imidazolium salts with lipophilic and hydrophilic substituents on the imidazole and benzimidazole rings. **K.L. Shelton**, P.O. Wagers, M. DeBord, M. Southerland, T. Williams, M. Panzner, C. Tessier, W.J. Youngs

3:00 288. Identification of a potent oral b-2 agonist as a growth enhancer for cattle. **A. Fenwick**

3:20 289. Structural characterization of domain three of *Plasmodium Falciparum* Copper P-ATPase. **J. Kisaka**

3:40 290. Preparation of azabicyclic precursors. D. Walker, **V.W. Gunawardana**

High School, Community College, and Undergraduate Education

DeVos: Gallery Overlook EF

T. B. Higgins, *Organizer*, *Presiding*

1:00 Introductory Remarks.

1:05 291. NSF Community College Innovation Challenge: A proposal. **A.J. Sanders**, **J.R. Weber**, **J. Ewing**, A. Fick, V. Narby

1:25 292. Undergraduate students' goals for chemistry laboratory coursework. **B.K. Dekorver**, M.H. Towns

1:45 293. Recorded video lectures integrated into Organic Chemistry I and II: Perspectives and student feedback. **C.G. Gulgas**

2:05 294. "Everything old is new again": Teaching general chemistry using the flipped classroom style AND with the Apple iPad. **J.R. Zubricky**

2:25 295. Cyclo6: A mobile game based on organic chemistry mechanisms. **J. Winter**

2:45 Intermission.

3:00 296. Picture the process: The role of visualization in problem solving. **L.L. Jones**, P. Atkins, L. Laverman

3:20 297. Research from high school to grad school. **D.H. Murray**

3:40 298. Developing an undergraduate research program in high altitude ballooning. **M. Davis**, B. Beck-Winchatz, T.B. Higgins

4:00 299. Alcohols, water, and hydrogen bonding: A simple set of experiments for the general chemistry lab. **M.A. Benvenuto**, B. Paulsen, K.C. Lanigan

4:20 300. Dialysis of small molecules in the presence of albumin; a facile lab to model drug distribution and drug-drug interferences. **M. Abualia**, G. Clark

4:40 Concluding Remarks.

Research at Undergraduate Institutions

DeVos: Gallery Overlook GH

B. Wile, *Organizer*

1:00 Introductory Remarks.

1:05 301. In situ generated metal nanoparticles as two-dimensional assemblies, core-shell structure and biosensor. **K. Bandyopadhyay**, D. Renard, R. Teh, C. Alexander

1:25 302. Using a focused small molecule library to study bacterial quorum sensing. **A. Danowitz**, J. Kuehne, C. Link, I. Schneider

1:45 303. The role of nuclear quantum effects on the electronic spectrum of 9-methylguanine. **Y. Law**, A.A. Hassanali

2:05 Intermission.

2:25 304. Parameterization of fluorescent protein chromophores. **D.L. Blood**, A. Rosnik, B.P. Krueger

2:45 305. Evaluating the effects of treatment combinations on erbB2+ cancer cells. **C.E. Taylor**, D. Jones, A.E. Walter, C.J. Kuhnheim, S.N. Steiger

3:05 Concluding Remarks.

Evidence Based Course Transformations

DeVos: River Overlook B

M. Cooper, *Organizer*, *Presiding*

1:30 Introductory Remarks.

1:35 306. Connections and conflicts students perceive between chemistry and molecular biology. **K.P. Kohn**, S.M. Underwood, M. Cooper

2:05 307. Designing assessments to measure three-dimensional learning in a college chemistry course. **S.M. Underwood**, M. Cooper, L.A. Posey

2:35 308. Exploring students' understanding of macroscopic energy in solution formation. **O. Judd**, N.M. Becker, M. Cooper

3:05 Intermission.

3:20 309. Investigating college students' understanding of light-matter interactions. **C. Minter**, N.M. Becker, M. Cooper

3:50 310. Learning organic chemistry, supported by a mosaic of resources. **M.T. Haynes**, R. Barnard, L.J. Peterson, B.P. Coppola, A.J. McNeil, J.P. Wolfe

4:20 311. Unpacking student-constructed explanations of acid-base reactions. **H. Kouyoumdjian**, S.M. Underwood, M. Cooper

Undergraduate Posters

DeVos: River Overlook Lobby

B. M. Eklov, J. J. Kiddle, *Organizers*

3:00 - 5:00

312. A framework for general chemistry laboratory design and evaluation. **S. Mattioli**, J.M. Shorb

313. A novel hydrothermal synthesis of molybdenum disulfide. **S. Shaker**, C. Malonzo, S. Rudisill, A. Stein

314. A structural and functional analysis of BshA from *Bacillus subtilis*: The first enzyme of the bacillithiol biosynthesis pathway. **K. Winchell**, A. VanDuinen, P.D. Cook

315. Acid catalyzed alumina sol gel matrices with metal oxide nanotemplates. **Z.J. Struzik**, J. Hodul

316. BODIPY palladium complexes as photocatalysts for C-C coupling. **B. Krzesinski**, H. He

317. Bouncing batteries: Exploring the chemistry of alkaline cells. **J. Hall**, T.S. Kuntzleman

318. Catalytic assessment and characterization of i*n-situ g*enerated gold-palladium bimetallic nanoparticles on functionalized surfaces . **J. Hales**, D. Renard, A. Peer, K. Bandyopadhyay

319. Characterization of novel boronic acid transition state inhibitors of the ADC-7 cephalosporinase from *Acinetobacter baumannii*. **A. VanDine**, M.A. Taracila, C. Romagnoli, E. Caselli, F. Prati, R.A. Bonomo, R.A. Powers, B. Wallar

320. Characterizing a novel inhibitor of ADC-7 cephalosporinase from *Acinetobacter baumannii*. **K.A. Smolen**, M.A. Taracila, C. Romagnoli, E. Caselli, F. Prati, R.A. Bonomo, R.A. Powers, B. Wallar

321. Chemoenzymatic synthesis of trehalose analogues: Rapid access to chemical probes for investigating mycobacteria. **B.L. Urbanek**, B. Swarts

322. Combating oxacillinase-24 bacterial resistance. **M. Elliott**

323. Continuous flow chemistry for the synthesis of amides from nitriles and amines. **A.M. Medina-Gonzalez**, M.T. Wentzel

324. Cost effective dye sensitized solar cells for renewable energy. S. Vivis, Z. Senock, B. McCray, L. Hansen, J. Mummert, **M.A. Grimminger**

325. Coulometric titration of thiosulfate ion in shampoo. **J. Francis**, T.S. Kuntzleman

326. Creating a non-phthalate plasticizer with a series of four different reactions. **T. Talaski**

327. Crystallographic analysis of BshB from *Bacillus subtilis*, the deacetylase involved in bacillithiol biosynthesis. **C.E. Meloche**, P.D. Cook

328. DART-MS: A confirmatory test for heme in bloodstains on fabric. **S. Torres**, R. Armitage

329. Degradation of Bisphenol a by exudate from little bluestem seeds. **K.S. VanderPloeg**, K. Pershinske, S. Stafford, C. Bogner, L.J. Putman

330. Determination of L-dopa in velvet beans using HPLC: A green laboratory for analytical chemistry. **H. Benson**, N. Holte, C. Haustein

331. Development of a novel transition frequency eigenvalue/PCA approach in the analysis of eye-tracking data for understanding viewing patterns of multiple representations. **K. Monson**, **Y. Yoon**, J.M. Shorb

332. Differentiation between bourbons by analysis of congeners with solid-phase microextraction (SPME) on-fiber oxime derivatization coupled with gas chromatography-mass spectrometry (GC-MS). **Y.P. Courtney**, **L.A. Baron**

333. Differentiation of smokeless propellants by HPLC coupled with mass spectrometry and chemiluminescence nitrogen detection. **J. Banovetz**, M.A. Nussbaum

334. Dinuclear Cr(III)-salen catalyst assembled through aromatic donor-acceptor interaction and its application in kinetic resolution of epoxides with $TMSN_3$. **M. Whitfield**, **A. Ogunsanya**, **M. Woodhouse**, Y. Liu

335. Driving nanocars on graphene Sheets: A quantum chemical investigation. **P. Winegar**, L. Valenzano

336. Effects of triple mutant VACM-1 on proliferation in RAMEC and COS-1 cells. **A.L. Schnell**, M. Burnatowska-Hledin

337. Efforts toward the synthesis of an octaiodocalix[4]arene. **T.L. Sanders**

338. Efforts towards the synthesis of β- and γ-amino acids containing *N*-alkyl pyridones. **J.P. Christopher**, **B.J. Heidmann**, C.E. Anderson

339. Electroless deposition on plastics. **Z. Waldman**, C.J. Donahue

340. Esterification of 2,2-dimethyl-1-propanol compared to banana flavoring. **E. Sowers**, B.W. Baldwin

341. Esterification of vanillin with succinic anhydride. **R. Hayes**, B.W. Baldwin

342. Examining the intracellular breakdown of toxic tau fragments. **A. Shepard**, E. Cooksey, B. Stevens, C. Damer, M. Steinhilb

343. Exploration into rotationally restricted *N*-alkyl 2-quinolones. **A.N. Bootsma**, C.E. Anderson

344. Glycation of insulin receptor fragments under hyperglycemic conditions and effect on insulin binding. **T. Rhinesmith**, R. Root-Bernstein

345. Green, highly efficient method for the protection of heterocyclic amino, hydroxyl, and thiol groups. **M. Jawor**, G. Mezei

346. How does BBr_3 cleave ethers? A DFT mechanistic study. **T.M. Kosak**, **H.A. Conrad**, A.L. Korich, R.L. Lord

347. How much POGIL is too much? M. Gillaspie, **L.L. Zart**

348. Hydrogenation of tetraphenylcyclopentadione. **S. Price**

349. Investigating the effect of reaction environment and starting materials on the growth mechanism of bismuth telluride nanoparticles synthesized by a modified polyol process. **D.L. Stevens**, C. Holder, E. Rugen, M.E. Anderson

350. Investigating the foundational layer formation of metal-organic coordinated thin films. **B. Bowser**, M.L. Ohnsorg, M.E. Anderson

351. Investigation of nucleophillic ring openings of aziridine. **J.A. Tarahomi**, O. Yu, J. Whitmore, M.E. Hart

352. Investigation of tyrosine-cysteine crosslinks in a model protein. **S. Hromada**, D.E. Benson

353. Lab procedure aspirin absorption. G. Clark, **J. Bierdz**

354. Leaching metals and inducing oxidation catalysis with salen complexes: A quantum chemical study. **J.R. Vaclavek**, L. Valenzano

355. Materials for organic electronics: Synthesis of 2,3-dihexyl-5-(trimethylstannyl) thieno[3,4-b]pyrazine. **C.E. Buysse**, S.C. Rasmussen

356. Mechanistic studies on the BBr_3-catalyzed cyclization of *o*-alkynylanisoles to form benzofurans. **M.E. Barylski**, A.L. Korich, R.L. Lord

357. Microwave assisted gold(I)-catalyzed rearrangement of *N*-propargyloxypyridines. **C.P. Reidy**, C.E. Anderson

358. Modification and green synthesis of sustainable tri-block copolymers. **Z. Swingen**, M.T. Wentzel, J.E. Wissinger

359. New modes of initiating cation radical cycloaddition dimerization and polymerization reactions. **B.N. Barbu**, E. Shin, E. Webb, D. Green, J.G. Gillmore

360. Ni (II) chelates containing oxime and carboxylate ligands: Synthesis and oxidation study. **M.A. McDaniel**, C.G. Gulgas, M.J. Baldwin

361. Non-enzymatic glucose biosensing using gold nanoparticles. **P. Yang**, C. Alexander, K. Bandyopadhyay

362. Optimizing chemical structure to find effective fluorescein diether cytochrome P450 substrates. **E.D. Cmehil**, **J. Norley**, L. Wysocki

363. pH dependence of copper leaching from anti-fouling marine paints. **A.C. Martin**, C. Rust, D.W. Carpenetti

364. Progress toward the synthesis of 5-azido inositol. **S.R. Rundell**, B. Swarts

365. Progress towards the synthesis of novel oxacyclophanes. **S. Sosa**, J. Wackerly

366. Quantifying urban tropospheric ozone and its precursors in Indianapolis, Indiana. **L. Harper**, A. Couto, M. Simpson, L.H. Mielke

367. Resveratrol-induced inhibition of endothelial cell growth *in vitro* is dependent on VACM-1/CUL5 NEDD8ylation status. **Z. DeBruine**, M. Burnatowska-Hledin

368. Ru/C-catalyzed reactions of 5-hydroxymethyl furfural. **J. Francis**, D.G. Kovacs

369. Selective activation of cobalt(III) Schiff base protein inhibitors. **V. Reichova**, R. Holbrook, M.C. Heffern, J. Coomes, T.J. Meade

370. Silver nanoshells synthesis by *in situ* generation of silver seeds on silica nanoparticle cores. **T. Siblini**, R. Teh, K. Bandyopadhyay

371. Structural and functional characterization of a novel inhibitor for the class C β-lactamase, ADC-7. **S.E. Stuut**, M.A. Taracila, C. Romagnoli, E. Caselli, F. Prati, R.A. Bonomo, R.A. Powers, B. Wallar

372. Structural and functional studies of GDP-D-rhamnose and GDP-D-pneumose biosynthesis enzymes. **B. Nicholson**, P.D. Cook

373. Structure and behavior of alkylphenols in different chemical environments. **E. Mordan**, A.V. Vazquez

374. Structure/function characterization of inhibitors binding to the class C β-lactamase ADC-7. **A. Bouza**, M.A. Taracila, C. Romagnoli, E. Caselli, F. Prati, R.A. Bonomo, R.A. Powers, B. Wallar

375. Structure-based inhibitor studies for the class C β-lactamase ADC-7. **H. Swanson**, M.A. Taracila, **C. Romagnoli**, E. Caselli, F. Prati, R.A. Bonomo, R.A. Powers, B. Wallar

376. Studies toward the synthesis of photolabile HNO donors – an exploration of selectivity for HNO generation. **Z.A. Fejedelem**, Y. Zhou , P. Sampson, A.J. Seed, N.E. Brasch

377. Surface properties of long acyl chains with amino acid head groups at aqueous interfaces investigated with the Wilhelmy plate method and nonlinear optical spectroscopy. **B. Sweeney**, S. Wilson, M.R. Watry

378. Synthesis and characterization of nickel based magnetic nanowires via electrochemical deposition method. **R. Giinther**, X. Zhou, P. Pauzauskie

379. Synthesis and evaluation of chemical probes for delivering antibody-recruiting small molecules to mycobacteria. **T.O. Nathan**, B. Swarts

380. Synthesis and verification of three peroxyacyl nitrate (PAN) analogs for use as calibration standards for urban air quality monitoring equipment. **T. Huynh**, J. Kaur, L.H. Mielke

381. Synthesis of glycine phthalimide using a heat gun. **E.A. Brueggeman**, B.W. Baldwin, C.L. Schaerer

382. Synthesis of macrocycles from 2.3-dichloro-1,4-naphthoquinone. **K. Jack**

383. Synthesis of pyrido lentzium. **H.N. Coggins**, C. Schaerer, B.W. Baldwin

384. Synthesis of self-healing copolymers: The effect of distance between cross-links. A. Elifritz, J. Lupica, **P. Tandler**

385. Synthesis of transition state analogues of diphosphomevalonate as inhibitors of cholesterol biosynthesis in *Streptococcus pneumoniae*. **O. Jung**, R.B. Silverman

386. The origins of life. R. Root-Bernstein, **A. Baker**, **T. Rhinesmith**

387. Theoretical interpretation of atomic and ionic size. **J.D. Weidman**, R.L. Dekock

388. Trifluoromethylation of model aryl halides (toward bistrifluoromethylquinazolinespirohexadienone). **J. Scott**

389. Understanding stress and self-concept during the high school to college transition. **B. Jones**, **B. Byrd**, M.L. Grunert

390. Uptake of fluorinated trehalose analogues by *Mycobacterium smegmatis*. **Z. Wagar**, B.L. Urbanek, B. Swarts

391. Using Fourier transform infrared spectroscopy to characterize alumina boehmite sol gel. **J. Hodul**

392. Sensor development using aminoalcohols derived from 1,10-phenanthroline. **N. Kapolka**, E. Schoffers, L. Kohler, D.L. Sellers, H. Marshall, G.T. Johnson

393. Synthesis of oxaquinonacylophanes from 2,3-dichloronapthoquinone. **R. Askren**, J. Wackerly

394. Analysis of supramolecular host-guest binding between an oxaquinonacyclophane and various guest molecules. **B. Rozeboom**

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Exhibit Hours

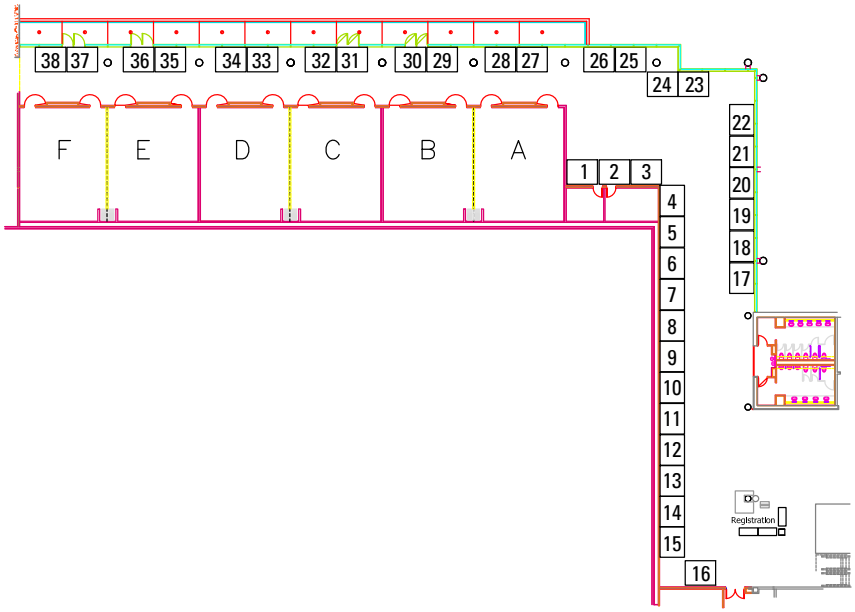
Thursday 28 May 2015, 9am - 9pm
Friday 29 May 2015, 9am - 5pm

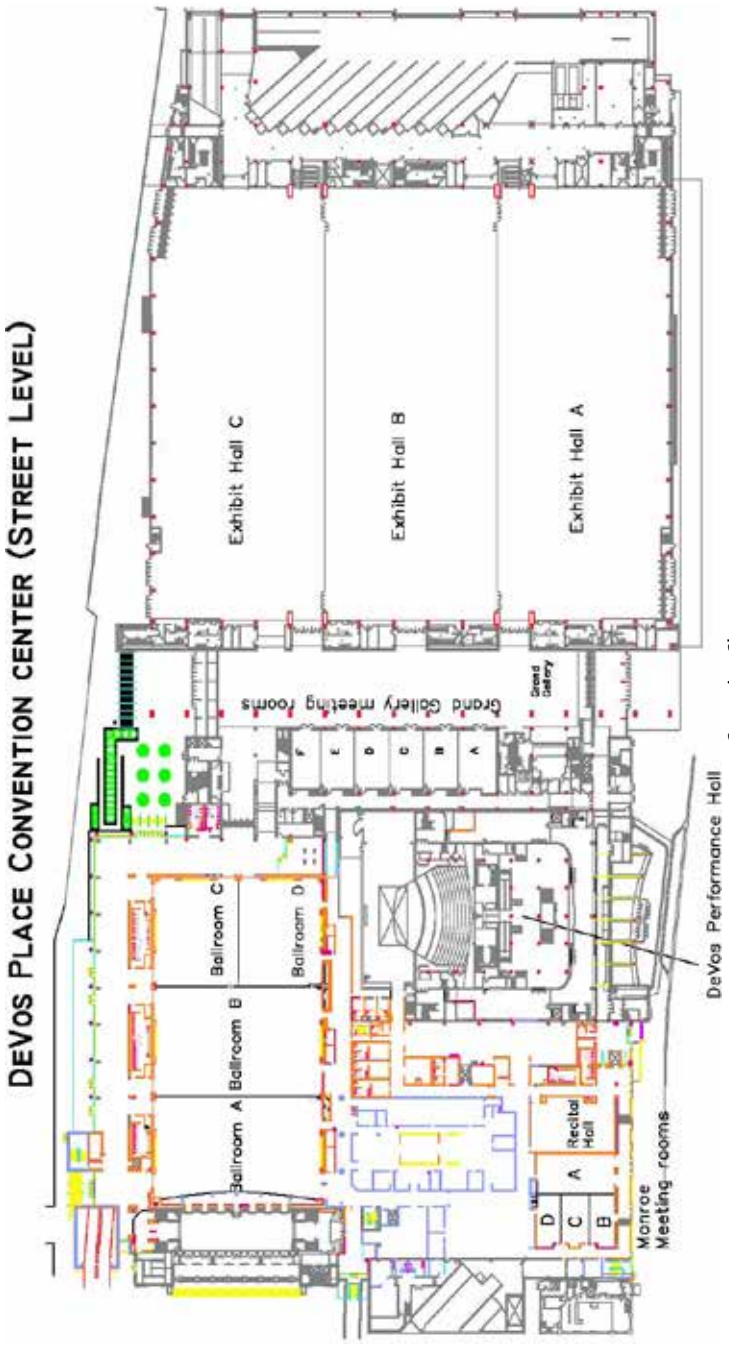
Booth	Exhibitor
1	Vernier Software & Technology
2	Bridge Organics
3	RHK Technology
4	Central Michigan University
5	Park Systems
6	University of Michigan
7	Metrohm USA
8	MSU Bioeconomy Institute
9	Bruker Corporation
10	Medicus Health
11	Biotage
12	Pine Research Instrumentation
13	Cytoviva Inc.
14	Sigma Aldrich
15	National Science Foundation
16	American Chemical Society
17	Anasazi Instruments
18	Particle Sizing Systems
19	Flinn Scientific
20	Magritek
21	IKA
22	ThalesNano, Inc.
23	Wayne State University
24	Strem Chemicals, Inc.
25	Peak Scientific
26	Honeywell Burdick & Jackson
27	Chatham University
28	Union University
29	University of Detroit - Mercy
30	Western Michigan University
31	Teledyne Isco
32	JASCO
33	Ark Pharm, Inc.
34	Thermo Fisher Scientific
35	Malvern Instruments - NanoSight
36	University of Toledo
38	CERM 2016 - 47th Central Regional Meeting

Exhibitor (Booth)	Website
American Chemical Society (16)	www.acs.org
Anasazi Instruments (17)	www.aiinmr.com
Ark Pharm, Inc. (33)	www.arkpharminc.com
Biotage (11)	http://www.biotage.com
Bridge Organics (2)	http://bridgeorganics.com
Bruker Corporation (9)	https://www.bruker.com
Central Michigan University (4)	https://www.cmich.edu
CERM 2016 - 47th Central Regional Meeting (38)	http://www.acscerm2016.org
Chatham University (27)	http://www.chatham.edu
Cytoviva Inc. (13)	http://www.cytoviva.com
Flinn Scientific (19)	http://www.flinnsci.com
Honeywell Burdick & Jackson (26)	http://honeywell.com
IKA (21)	http://ika.com
JASCO (32)	http://www.jascoinc.com
Magritek (20)	http://www.magritek.com
Malvern Instruments - NanoSight (35)	www.malvern.com
Medicus Health (10)	http://www.medicus-health.com

Metrohm USA (7) . . . . . .http://www.metrohmusa.com
MSU Bioeconomy Institute (8) . . . . . .http://lakeshoreadvantage.com
National Science Foundation (15) . . . . . .http://nsf.gov
Park Systems (5) . . . . . .http://www.parkafm.com
Particle Sizing Systems (18). . . . . .http://pssnicomp.com
Peak Scientific (25). . . . . .http://www.peakscientific.com
Pine Research Instrumentation (12) . . . . . .www.pineinst.com/echem
RHK Technology (3). . . . . .http://rhk-tech.com
Sigma Aldrich (14) . . . . . .sigma-aldrich.com
Strem Chemicals, Inc. (24). . . . . .http://www.strem.com
Teledyne Isco (31) . . . . . .http://www.isco.com
ThalesNano, Inc. (22). . . . . .www.thalesnano.com
Thermo Fisher Scientific (34) . . . . . .http://www.thermofisher.com/en
University of Detroit - Mercy (29). . . . . .http://www.udmercy.edu
Union University (28) . . . . . .http://www.uu.edu
University of Michigan (6) . . . . . .http://www.lsa.umich.edu/chem
University of Toledo (36) . . . . . .http://www.utoledo.edu/
Vernier Software & Technology (1). . . . . .http://www.vernier.com
Wayne State University (23). . . . . .http://chem.wayne.edu/
Western Michigan University (30) . . . . . .www.wmich.edu/chemistry

Exhibitor Layout Map - River Overlook Foyer




DeVos Place Convention Center (Street Level)
Exhibit Hall C
Exhibit Hall B
Exhibit Hall A
Grand Gallery meeting rooms
Grand Gallery
F
E
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C
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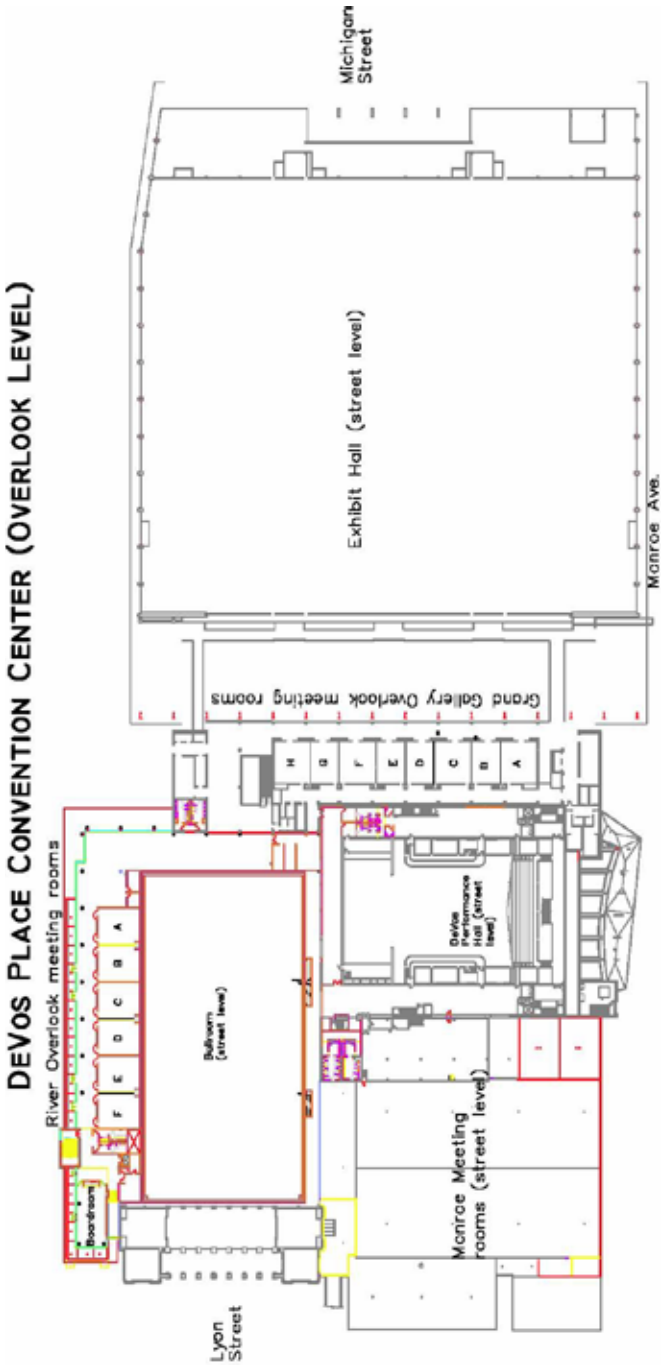
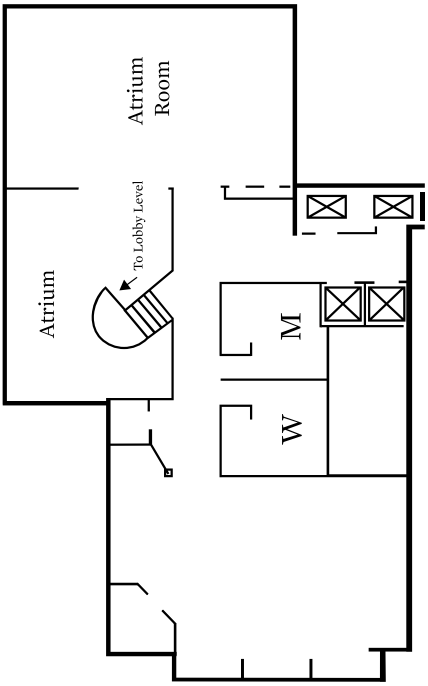
Ballroom C
Ballroom D
Ballroom B
Ballroom A
DeVos Performance Hall
Recital Hall
A
B
C
D
Monroe Meeting rooms


DeVos Place Convention Center (Overlook Level)
Michigan Street
Exhibit Hall (street level)
Monroe Ave.
Grand Gallery Overlook meeting rooms
River Overlook meeting rooms
Ballroom (street level)
Monroe Meeting rooms (street level)
Lyon Street


Atrium Room
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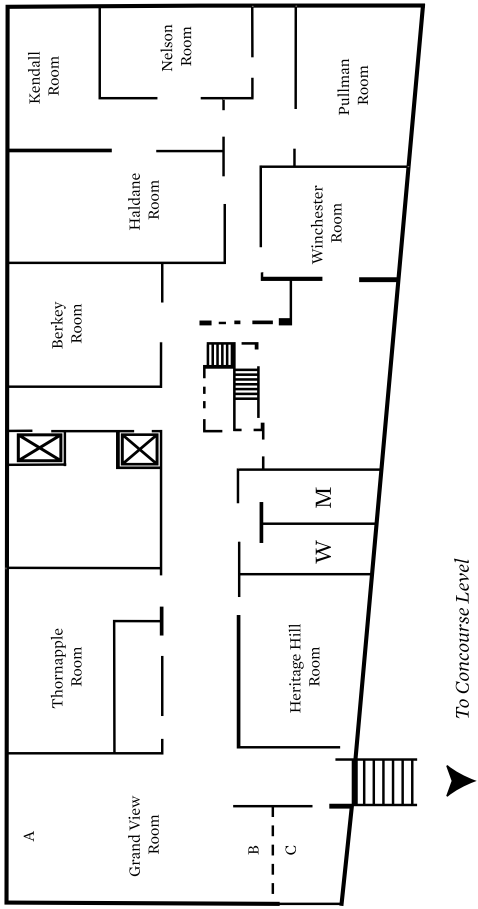
Kendall Room
Nelson Room
Pullman Room
Haldane Room
Winchester Room
Berkey Room
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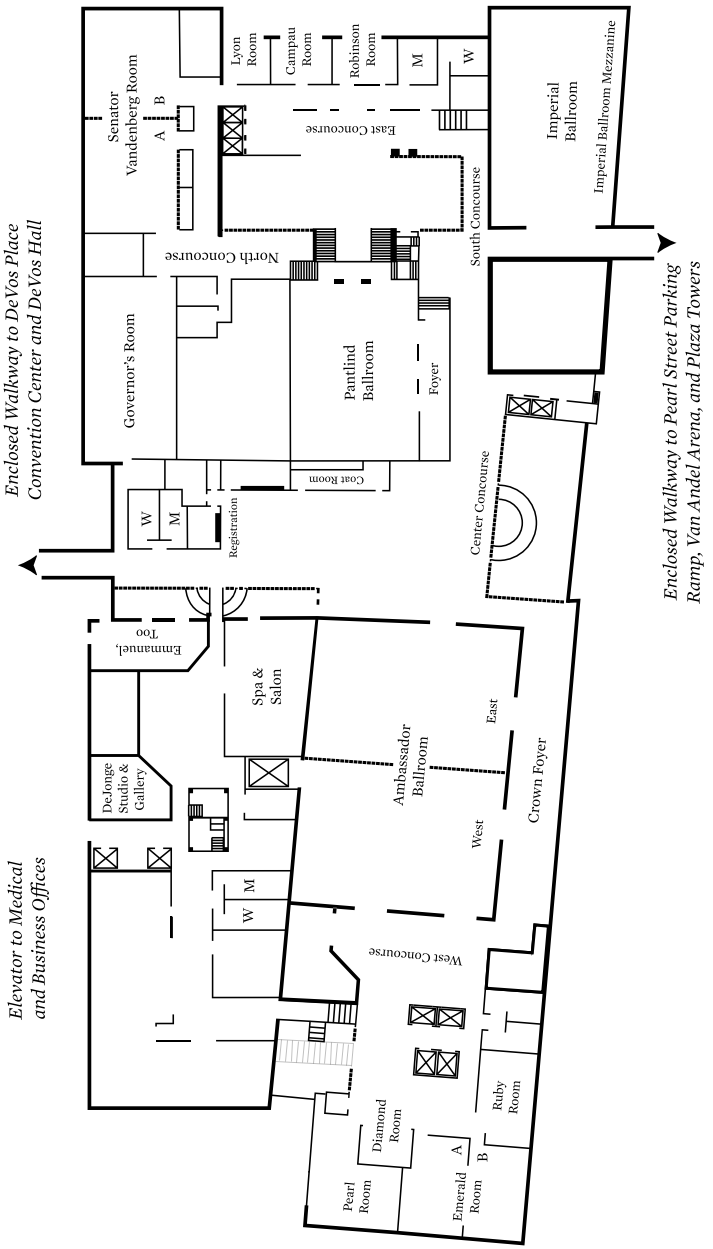
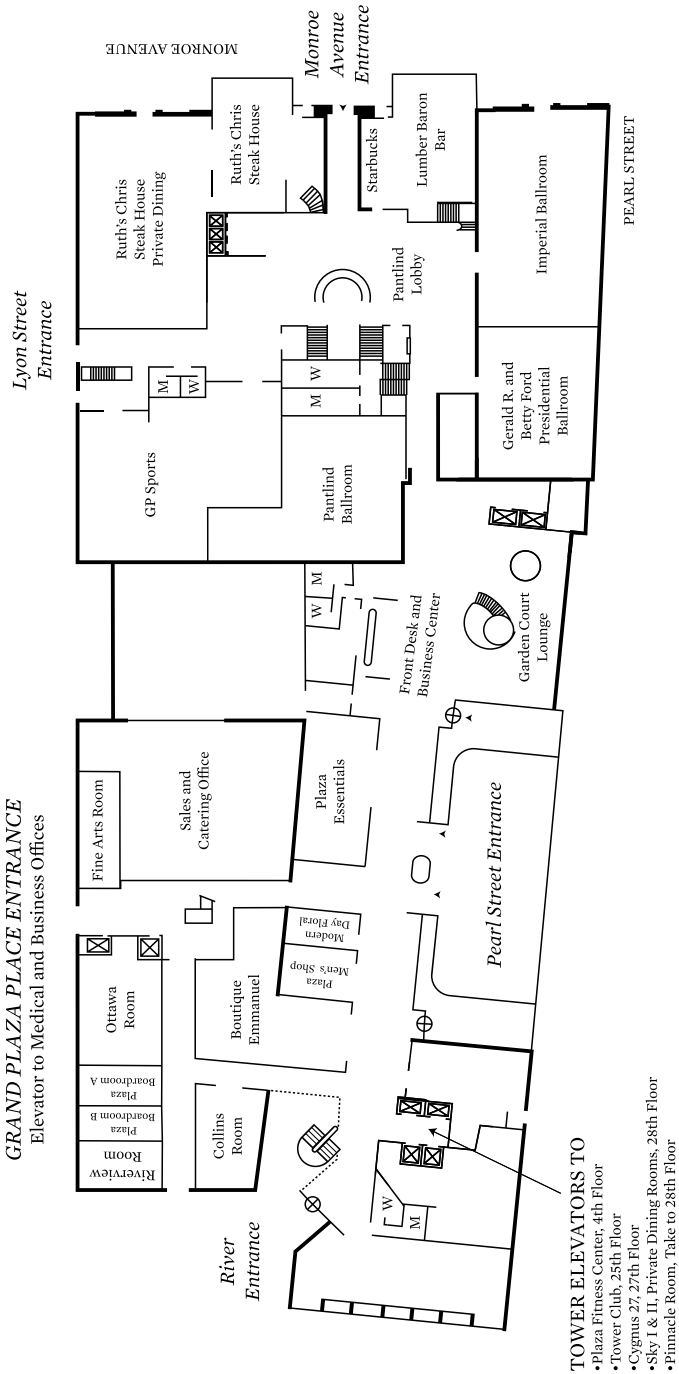
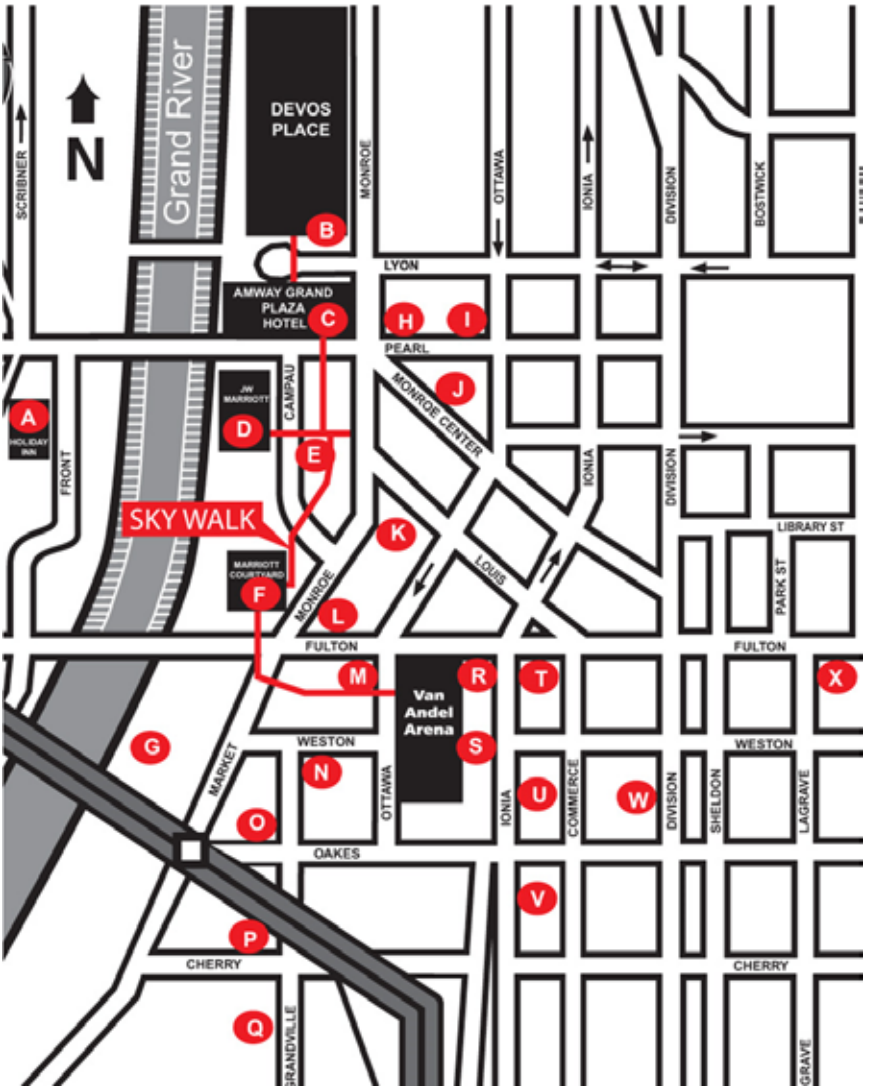
Thornapple Room
Heritage Hill Room
To Concourse Level
A
Grand View Room
B
C


Enclosed Walkway to DeVos Place
Convention Center and DeVos Hall
Elevator to Medical
and Business Offices
Enclosed Walkway to Pearl Street Parking
Ramp, Van Andel Arena, and Plaza Towers
Senator Vandenberg Room
A
B
Lyon Room
Campau Room
Robinson Room
M
W
East Concourse
Imperial Ballroom
Imperial Ballroom Mezzanine
South Concourse
North Concourse
Governor's Room
Pantlind Ballroom
Foyer
Coat Room
Registration
W
M
Center Concourse
Emmanuel, Too
Spa & Salon
DeJonge Studio & Gallery
Ambassador Ballroom
East
West
Crown Foyer
W
M
West Concourse
Diamond Room
Ruby Room
Pearl Room
Emerald Room
A
B


MONROE AVENUE
Monroe Avenue Entrance
Lyon Street Entrance
Ruth's Chris Steak House Private Dining
Ruth's Chris Steak House
Starbucks
Lumber Baron Bar
Pantlind Lobby
Imperial Ballroom
PEARL STREET
GP Sports
M
W
Pantlind Ballroom
Gerald R. and Betty Ford Presidential Ballroom
Front Desk and Business Center
Garden Court Lounge
GRAND PLAZA PLACE ENTRANCE
Elevator to Medical and Business Offices
Fine Arts Room
Sales and Catering Office
Plaza Essentials
Pearl Street Entrance
Riverview Room
Ottawa Room
Plaza Boardroom B
Plaza Boardroom A
Collins Room
Boutique Emmanuel
Plaza Men's Shop
Modern Day Floral
River Entrance
TOWER ELEVATORS TO
•Plaza Fitness Center, 4th Floor
•Tower Club, 25th Floor
•Cygnus 27, 27th Floor
•Sky I & II, Private Dining Rooms, 28th Floor
•Pinnacle Room, Take to 28th Floor



Downtown Pubs and Nightlife

*Those listed in **bold** are partners of Experience Grand Rapids.*

Experience GRAND RAPIDS

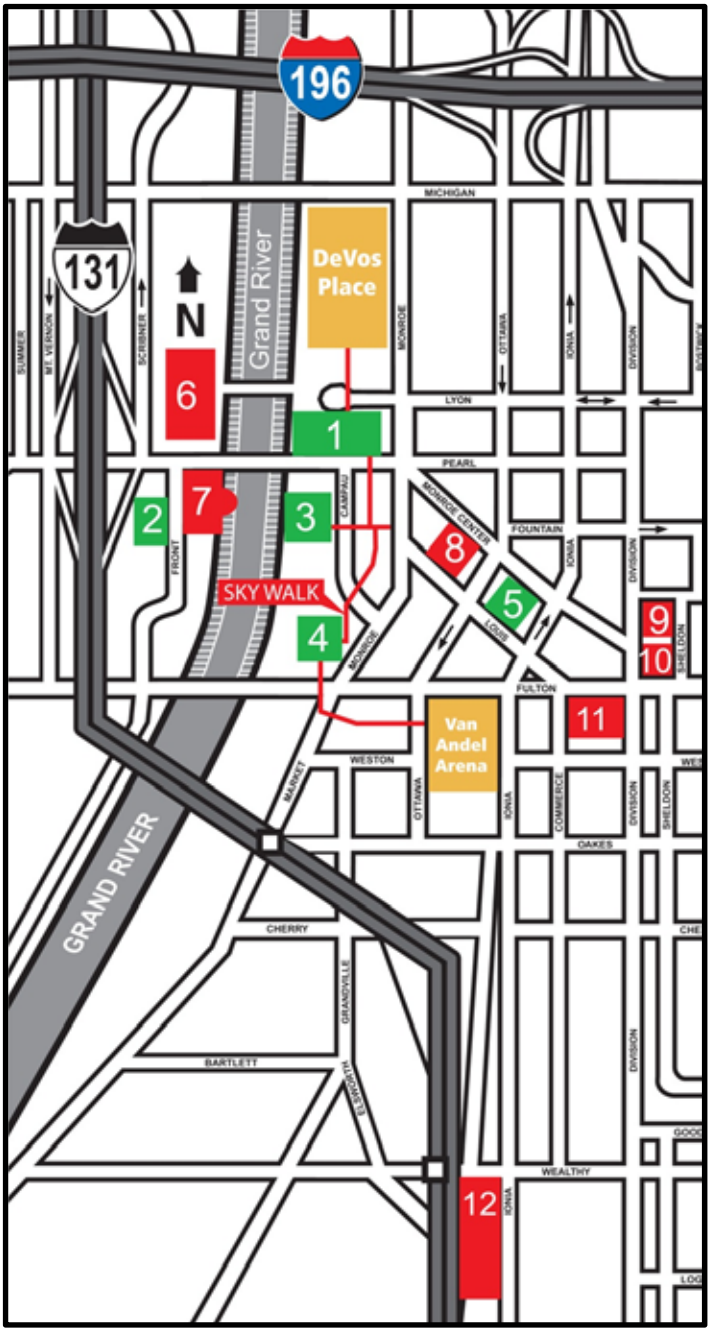
A. **Pearl Street Lounge** *(at Holiday Inn)* 616-235-7611
B. **Reserve** 616-855-9463
C. **Amway Grand Plaza Pubs** (*reachable by Skywalk*) 616-774-2000

GP Sports **Garden Court Bar**
Ruth's Chris **Lumber Baron Bar**
Cygnus *(top of the Amway Grand Plaza Hotel)*

D. **Mixology** at the JW *(river views)* 616-242-1500
E. **Zs Restaurant & Bar** (*reachable by Skywalk*) 616-454-3141
F. **The Bistro** *at Marriott Courtyard* 616-242-6000
G **Charley's Crab** (*river views*) 616-459-2500
H. **Mojos Piano Bar** 616-776-9000
The Bull's Head Tavern 616-454-3580
Flanagan's Irish Pub 616-454-7852
I. **Sundance Grill** 616-776-1616
J. **TreCugini** 616-235-9339
Cinco De Mayo 616-719-2401
K. **TGI Fridays** 616-742-8443
L. **The B.O.B.** *(Big Old Building)* 616-356-2000

H.O.M.E. **Gilly's**
Bobarino's **J-Bar**
Bob's Brewery **Dr. Grins Comedy Club**

N. **Bistro Bella Vita** 616-222-4600
O. Grand Woods Lounge 616-451-4300
P. **The Intersection (Nightlife Entertainment)** 616-451-8232
Q. **Founders Brewing Company** 616-776-1195
R. **Grand Rapids Brewing Company** 616-458-7000
S. **Bar Divani** 616-774-9463
J. Gardella's 616-459-9924
Bar Divani 616-774-9463
Hopcat 616-451-4677
T. **SanChez** 616-776-6950
Buffalo Wild Wings 616-454-9464
Back Forty Saloon 616-742-4040
U. **McFadden's** Restaurant and Saloon 616-454-9105
Ritz Koney Island 616-451-3701
Stella's Lounge 616-742-4444
Pyramid Scheme (Nightlife Entertainment) 616-272-3758
V. Peppino's Sports Lounge 616-456-8444
Tavern on the Square 616- 456-7673
W. Rockwell/Republic 616-551-3563
X. **One Trick Pony/Cottage Bar** 616-235-7669


196
131
N
Grand River
DeVos Place
MICHIGAN
LYON
PEARL
FOUNTAIN
FULTON
WESTON
CHERRY
OAKES
WEALTHY
BARTLETT
GRAND RIVER
SKY WALK
Van Andel Arena
MONROE
OTTAWA
IONIA
DIVISION
SHELDON
COMMERCE
FRONT
CAMPAU
MONROE CENTER
LOUIS
BARNEY
GRANDVILLE
EASTBELTLINE
1
2
3
4
5
6
7
8
9
10
11
12

Grand Rapids Downtown Hotels and Attractions

1	Amway Grand Plaza Hotel 187 Monroe Ave., NW 49503	(616) 774-2000
2	Holiday Inn Grand Rapids Downtown 310 Pearl St. NW 49504	(616) 235-7611
3	JW Marriott Grand Rapids 235 Louis Street 49503	(616) 242-1500
4	Courtyard by Marriott Downtown 11 Monroe Ave. NW 49503	(616) 242-6000
5	City Flats 83 Monroe Center NW 49503	(616) 451-1892
6	Gerald R. Ford Museum 303 Pearl St. NW 49504	(616) 254-0400
7	Grand Rapids Public Museum 272 Pearl Street NW 49504	(616) 456-3977
8	Grand Rapids Art Museum 101 Monroe Center NW 49503	(616) 831-1000
9	Civic Theater 30 Division Avenue	(616) 222-6650
10	Grand Rapids Children's Museum 22 Sheldon Ave. NE 49503	(616) 235-4726
11	Urban Institute of Contemporary Arts (UICA) 2 West Fulton NW 49503	(616) 454-7000
12	The Downtown Market 435 Ionia Ave SW	(616) 805-5308

Experience GRAND RAPIDS

Notes


CHEMISTRY: A GRAND ENTERPRISE
FOOD
HEALTH
ENVIRONMENT
MAY 27-30
2015
Joint Great Lakes/Central Regional Meeting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