



NEWSLETTER

Oklahoma Section American Chemical Society

Volume 24 Number 1

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

February 2019

Section Meeting
Thursday 28 Feb 2019

OF COURSE, SIZE MATTERS Nobody wants a small natural-product drug-discovery library

Robert H. Cichewicz



*Natural Products Discovery Group and Institute for
Natural Product Appl. & Research Technologies
University of Oklahoma, Norman, OK*

Luck, fate, kismet, providence...those are some of the notions that people invoke when they are faced with the daunting challenge of creating new drugs. These different mindsets are based in part on a recurring concern in the field of drug development: where should one start to access the best chemical resources for a fledgling drug discovery campaign? In response to this challenge, our team has focused on the building and applying what has become one of the world's

abstract continued on page 2 with the speaker's biographical sketch.

Univ. of Central Oklahoma, Edmond, OK
Howell Hall Atrium and
Nigh University Center Room 421

6:00–6:30 pm Reception (Howell)
6:30–7:15 pm Dinner (Nigh)
7:15–8:15 pm Presentation (Nigh)



UCO campus map
with parking code

Campus map (QR above) Paid parking is available in the Visitor Lot, east of the Nigh University Center. See the parking map for instructions and a code to get free parking. The Howell Hall Atrium is on the ground floor between Howell Hall and the Howell Hall Laboratory Annex Building. The Heritage room is on the third floor to the right of the central stairway.

Dinner Reservation Information

Menu, Fajita Buffet

Beef and chicken fajita strips tossed in grilled peppers and onions beside warm flour tortillas	Cost \$20 members \$5 students
Spanish rice and refried beans shredded cheddar, sour cream, guacamole, shaved lettuce and tomatoes cinnamon churros with warm honey	RSVP Deadline Monday 26 Feb noon Contact: Carla Supon 405-974-5018 csupon@uco.edu

RSVP is NOT required to attend the presentation.

James J. (Jim) Dechter

July 1, 1948 – February 24, 2018

Jim was born on July 1, 1948 to Ruth E. (Young) and Dr. Joseph M. Dechter in McKeesport, PA. He was the youngest of three children. Jim spent his entire professional career in academia and research. He graduated from the Shadyside Academy in Pittsburgh in 1966 and then completed his undergraduate degree in chemistry from Carnegie Mellon University in 1970. Jim chose to continue his studies in chemistry at UCLA and earned his Ph.D. in 1975. He then completed post-doctoral studies at Michigan State University and at Florida State University before joining the faculty at the University of Alabama in 1979. In 1986 he joined ARCO in Dallas, Texas.

Jim moved to the University of Central Oklahoma in Edmond, OK in 1994. At UCO he taught courses in general chemistry, inorganic chemistry, and NMR spectroscopy. Jim served as assistant chair and then chair of the Department



Dechter continued on page 2 →

• Web Site Updates Coming Soon •

The ACS has severed ties with the vendor hosting the current OK ACS Section web site. Our web master is working on migrating our site to a new vendor. The URL will not change. Note that the Pentasectional web site is different and unaffected by the migration. Look for these web site improvements later this spring.

64TH ANNUAL PENTASECTIONAL MEETING

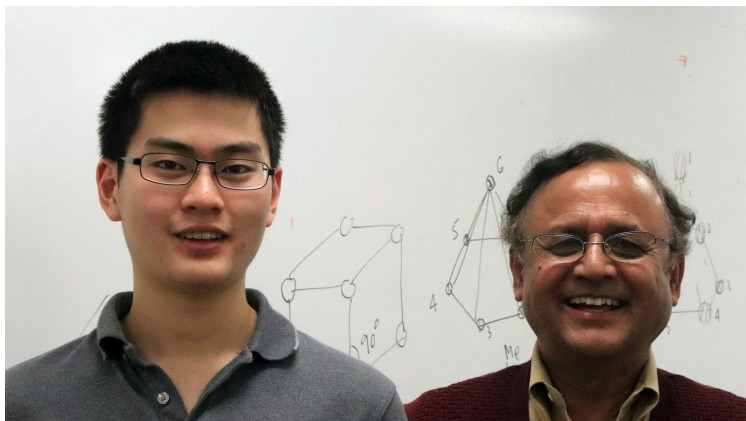
Saturday 13 Apr 2019

DETAILS ON PAGE 3

Fall Election Results

Please join me in congratulating the winners of this year's ACS Oklahoma Section Election. Terms beginning 01 Jan 2019.

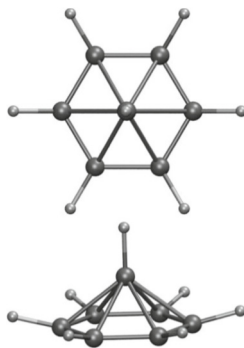
- Chair-Elect (3 year term chair elect/chair/past chair, will be chair in 2020.)
Stephanie L. Skiles
- Treasurer (2 year term starting 01/01/19.)
Jason Wickham



George Wang (left) and his chemistry teacher Fazlur Rahman (right).

OSSM Student Predicts First Stable Heptacoordinate Carbon Using *ab initio* DFT

George Wang, while a junior at OSSM, was taught the conventional wisdom that carbon wants to form four bonds. However his chemistry teacher, Fazlur Rahman, also told him that carbon can form up to six bonds in special circumstances. Having just learned to use the OU super computer (OSCAR), then in his junior year, George wanted to do calculations on the six coordinate carbon that had been reported. Encouraged by his ability to reproduce the literature results, he asked, could carbon form seven bonds? His calculations showed that it could! If correct, this was a fundamentally new result. At this point his chemistry teacher contacted Prof. Bin Wang, a theorist in Chemical Engineering at OU with experience in *ab initio* DFT. He worked with George to verify the validity of the calculations. They identified a stable 3D pyramidal configuration of the tropylium trication ($C_7H_7^{3+}$) that involves a seven-coordinate carbon (Fig. above), also stable against deprotonation and dissociation. George began graduate school in Chemistry at Stanford University Fall 2018.



G. Wang, A. K. F. Rahman, B. Wang, *J. Mol. Model.* **24**(5), 116 (2018). [DOI: 10.1007/s00894-018-3640-9]

(Dechter—continued from front page)

of Chemistry from 2000-2004. He served on all major university councils including Faculty Senate, Graduate Council, and Academic Affairs Council. Jim was active in the Oklahoma Section of the American Chemical Society, serving as Chair in 1999 and as webmaster from 2000-2015. Jim retired from UCO in May 2016 and was active in the Emeritus Faculty Association.

Jim became interested in nuclear magnetic resonance (NMR) spectroscopy when an undergraduate at CMU as a result of his brother's graduate physics research studies using nuclear magnetic resonance techniques in solid state physics. Over the years he and his brother, Sam, had a common ground for many spirited discussions. Jim and his sister Nancy were both life-long Pittsburgh Pirates fans and followed the team via TV, often connecting on the telephone to discuss the progress and outcome of the games.

(Speaker—continued from front page)

largest collections of fungi and fungal natural products found in an academic setting. Moreover, we have actively shared this resource with drug discovery teams to unearth its promising bioactive components. This presentation will delve into the unique mix of public outreach and scientific collaboration behind the discovery of new and unusual bioactive compounds produced by fungi that originated through our citizen-science-based initiative called the Citizen Science Soil Collection Program (www.whatsinyourbackyard.org). Many promising bioactive molecules have emerged from this cooperative effort and this talk will highlight several examples that stands out as models that illustrate the value-added benefits stemming from probing natural product libraries. Such research efforts often spur new insights into disease biology, enrich our understanding of nature and chemical ecology, as well as provide novel avenues for natural product application that go beyond immediate goals and expectations.

Robert H. Cichewicz Biographical Sketch

Robert has had a long-standing fascination for the chemistry and biology of natural products. These interests were initially cultivated during his childhood and young adult life in rural western Michigan and further refined during his undergraduate experiences in biology (B.S. 1994) and anthropology (B.S. 1994) at Grand Valley State University. Robert went on to the University of Louisiana, Monroe where he obtained his M.S. degree in pharmaceutical sciences (1999) under the guidance of Dr. S. Kouzi in the microbial biotransformation of natural products. Following these studies, Robert joined the plant natural products lab of Dr. M. G. Nair at Michigan State University where he earned his Ph.D. in 2002. Upon moving to the University of California, Santa Cruz, Robert conducted postdoctoral studies in the field of bioactive marine-derived natural products under the mentorship of Dr. P. Crews. In 2005, Robert began his independent research career by establishing the Natural Products Discovery Group (<http://npdg.ou.edu>) as an Assistant Professor in the Department of Chemistry and Biochemistry at the University of Oklahoma. He was promoted to Associate Professor in 2011 and later named a Regents' Professor in 2012. Also in 2012, Robert was appointed the Director of the University of Oklahoma, Institute for Natural Products Applications and Research Technologies (INPART), which is focused on translating natural products into therapeutic leads to combat cancer, infectious diseases, and other unmet medical needs. In 2014, Robert was promoted to full professor. Robert's research group merges technologies and methods from the chemical, biological, and microbiological sciences for the purpose of discovering new bioactive metabolites from fungi and bacteria.

SWRM 2023 OKC

hosted by the Oklahoma Section



ACS
Chemistry for Life™



CHEMISTRY OLYMPIAD

2019 Calendar

- March 1–31 — Local Section Competitions
- April 23–29 — National Exam (exact date TBA)
- TBD — Study Camp
- July 21–30 — 51th IChO Paris, France

Contact Reza Latifi for more information

reza.latifi@okstate.edu 405.744.4330

If your school has not participated before please contact Reza so he knows that you are interested and has good contact information.

DO YOU HAVE ANY MEMORABILIA FROM THE OKLAHOMA SECTION?

Old Newsletters, Pentasectional Programs, Section meeting announcements, issues of *The Vapor Pressure*, etc.

2019 is the centennial of the Oklahoma Section! The 64th Pentasectional Meeting will be our centennial celebration.

Please contact Lloyd Bumm if you have memorabilia to share. bumm@ou.edu

- Mark Your Calendars •
- ## National Chemistry Week 2019
- Oct 20–29
- Theme: *Marvelous Metals*

SOLICITING NOMINATIONS

Oklahoma Section Awards for Undergraduate Students

- The *Roger Baldwin Graduate Student Award* provides \$500 for students entering graduate school in chemistry or a chemistry related field. The application deadline is May 1st every year.
- The *Terrill Smith Travel Award* is a grant of up to \$600 for travel to present a paper or poster at a national or regional ACS meeting. The application deadline is 4 weeks prior to the meeting start date.

For more information and forms please visit the web site:

<http://oklahoma.sites.acs.org/undergraduateawards.htm>

—Chuck Rice (Awards Committee)



64TH ANNUAL PENTASECTIONAL MEETING

Saturday 13 Apr 2019

The NCED Hotel & Conference Center

Norman, OK

Hosted by the Oklahoma Section

Symposium Session Topics

Analytical Chemistry
Biochemistry
Biofuels/Environmental Chemistry
Chemical Education
History of Chemistry in Oklahoma
Inorganic Chemistry
Medicinal Chemistry
Nanotechnology—Materials/Polymers
Organic Chemistry
Physical Chemistry



Pentasectional
Web site

Call for Abstracts

•• DEADLINE 15 MAR 2019 ••

Abstract submission, registration, and payment will be available through the web site.

Register in advance using the online registration and payment option to enjoy the substantial discount over onsite registration.

Lodging is available on the conference site. Informal Friday night events will be announced on the Pentasectional web site.

Questions? contact Lloyd Bumm
[\(bumm@ou.edu\)](mailto:bumm@ou.edu)

<http://pentasectional.okstate.edu/>

Earth Week 2019

Apr 21–27

Take Note: The Chemistry of Paper

2019 Oklahoma ACS Section Officers and

Standing Committee Chairs

Naga Rama Kothapalli	Chair
Stephanie L. Skiles	Chair Elect
Allen Applett	Immediate Past Chair
Lloyd A. Bumm	Secretary + interim Newsletter ed.
Jason Wickham	Treasurer
Allen Applett	Councilor + Nominations Com.
Nicholas F. Materer	Alternate Councilor
Charles V. Rice	Awards Com.
Reza Latifi	Chemistry Olympiad Com.
John Michael Ferguson	National Chemistry Week Com.
Cheryl Frech	Public Relations
Nicholas F. Materer	Web Master



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OK ACS web
QR code

Oklahoma ACS Calendar of Events.

Visit the Oklahoma ACS WWW site for the latest information.

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

CALENDAR OF EVENTS

2019 Dates & Speakers

Feb 28 (Thu) UCO

Robert H. Cichewicz, Dept of Chem & Biochem, OU, Norman, OK
OF COURSE, SIZE MATTERS:

Nobody wants a small natural-product drug-discovery library

Apr 13 (Sat) 64rd Pentasectional Meeting

NCED, Norman, OK

Apr 21–27 (Sat) Earth Week

THEME: Take Note: The Chemistry of Paper

Oct (16–18) MWORM 2019

Wichita, KS

Oct (20–26) National Chemistry Week

Marvelous Metals

Oct (Sat) NCW Event at Science Museum Oklahoma

Nov (13–16) SWRM 2019

El Paso, TX

