



NEWSLETTER

Oklahoma Section American Chemical Society

Volume 28 Number 2

<https://okacs.org/>

September 2023

Oklahoma ACS Family Night
Friday 15 Sep 2023

The Quantum Mechanics of Hot Peppers

William Kelly

Dept. of Chemistry & Physics
Southwest Oklahoma State Univ.
Weatherford, OK



What is the connection between hot peppers and the science of Quantum Mechanics? Ask yourself this: Why do fatty foods such as guacamole or sour cream relieve the burning sensations after eating an exceptionally hot pepper while cold water or other cold beverages offer no relief. The answer can be found in the classic chemical expression *like dissolves like* but what does this mean on the molecular level? In the end, this presentation will show the graphical results of Hartree-Fock (HF) electronic structure based computational modeling applied to capsaicin and various fatty acids/esters to develop a visual model of what chemists mean by *like dissolves like*. Along the way the presentation will examine the key precepts/assumptions of Quantum Mechanics and the simplifica-

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

Oklahoma Baptist University, Shawnee, OK
map: <http://www.okbu.edu>

6:00 pm Social Hour & Picnic
Wood Science Building
Lawn games [weather permitting]

7:30 pm Presentation
Wood Science Bldg 102 (large lecture hall)



OBU map
QR code

Dinner Reservation Information

	Cost
Picnic Menu	\$15 members
Hamburgers & hotdogs	\$10 students
(ask about plant-based options)	\$7 children under 12
potato chips	
pickles	RSVP Deadline
cookies	Tuesday 12 Sep 5 pm
soft drinks	Contact: Nathan Malmberg
	nathan.malmberg@okbu.edu
	405-585-4126

RSVP is NOT required to attend the presentation.

Allen W. Apblett 1963-2023



On the morning May 29, 2023, the Oklahoma Section of the ACS lost one of its own, Allen Apblett, to a tragic car accident on the way to visit his daughter, Laura. Laura lives in Prince Edward Island, Canada, where she is currently a student studying environmental science at the University of Prince Edward Island. His wife, Natalie Menzies, also passed away due to injuries sustained in this accident.

Allen was a fixture in the Oklahoma Section since joining Oklahoma State University in 1997. He was in his 6th term as local section councilor and was an energetic member, always helping the section promote chemistry. He started his journey in chemistry from his home province of New Brunswick in eastern Canada. He earned a bachelor's degree in science with first class honors from the University of New Brunswick in 1984, and he moved to western Canada to obtain a doctorate from the University of Calgary in 1989. Allen was awarded a prestigious Natural Sciences and Engineering Research Council of Canada Postdoctoral Fellow-

Allen Apblett continued on page 2 →

The section prepares for SWRM 2023

!! Volunteers needed !!

News on page 3. →

OK ACS OFFICER NOMINATIONS

We are seeking nominations for 3 positions

Chair Elect. (3 year term—chair elect/chair/past chair)

Secretary (2 year term)

Councilor ... (2 year, remainder of Allen Apblett's term)

Alternate Councilor (3 year term)

Please send nominations to

Trevor Ellis (Section Chair) trevor.ellis@swosu.edu
or Stephanie Jones (Nominations chair) sjones116@ucco.edu

get involved • make a difference

ELECTION SCHEDULE

Nominations due 10 Oct • Ballot mailing 20 Oct

Cast Ballots due on or before 13 Nov 5 pm

Councilor's Report

J. Michael Ferguson (Oklahoma Section Alternate Councilor)

The Council met on August 16, 2023.

1. New members were elected to the Council Policy Committee (CPC), Committee on Committees (ConC), and Committee on Nominations and Elections (N&E).
2. The Council voted to add an international member to the Board of Directors. The number of at-large members of the Board was reduced from six to five. (There was some debate about the issue, but it passed with about 65% approval.)
3. The CPC voted to revise the reimbursement program for Councilors, effective Jan. 1, 2024. The CPC will provide a single payment of \$2000 per Councilor per meeting, directly to the local section/division.
4. ACS President Giordan led a discussion titled, "ACS Council: Equitable Governance for the Future." Suggestions included finding ways to involve younger members in governance activities earlier in their careers and finding ways to get members with disabilities to become more involved.
5. The various boards and committees presented reports. Of substantial note are the following guideline changes for Bachelor's Degree Programs:
 - a. Requirement for total lab hours reduced from 400 to 350.
 - b. Programs are required to teach three in-depth courses per year (reduced from four).
 - c. Contact hour maximum for faculty raised to 15 hours per semester or quarter.
 - d. Students can receive electronic badges that describe requirements needed for certification.
6. There has been a substantial emphasis on DEIR (Diversity, Equity, Inclusion, and Respect), and departments are encouraged to get a "snapshot" of how well they meet DEIR guidelines.

(Allen Apblett—continued from front page)

ship, a fellowship that he chose to use at Harvard University to work with Dr. Andrew Barron. In 1991, he started his independent scientific career as an assistant professor of Chemistry at Tulane University and then moved to Oklahoma State University in 1997. Oklahoma State University (OSU) became Allen's home for much of his scholarly and entrepreneurial scientific career. It is the place where Allen received tenure, where he advanced to become professor of Chemistry, and where he became the founder of successful businesses. At OSU, he mentored and advised 5 postdoctoral fellows, over 50 PhD and MS students, and more than 35 undergraduate students. His academic and scientific contributions have resulted in over 150 papers, hundreds of invited talks, and several patents. He was honored as the 2014 Oklahoma Chemist of the Year, selected for an EPA Green Chemistry Challenge Award, and inducted as a fellow of the American Chemical Society, the American Ceramic Society and the National Academy of Inventors.

(Speaker—continued from front page)

tions that allowed the development of the ab initio Hartree-Fock model, the first reasonably accurate structural/electronic model applicable to chemical systems. After the presentation you are invited to test your mettle in the *Hot Pepper Challenge*.

William Kelly Biographical Sketch

block from Fenway Park and has remained a Red Sox fan all his life. A physical organic chemist, he obtained his Ph.D. from Dartmouth College under the direction of Dr. Gordon Gribble after studying the conformational requirements of H-F through space spin-spin coupling in NMR Spectroscopy. Following a post-doc with Nathan Kornblum at Purdue University, which aroused his interest in the chemistry of free radicals, he has held faculty positions at Western Michigan University and Southwestern Oklahoma State University. He is the author/co-author of 21 publications in areas as diverse as organic synthetic methodology, NMR spectroscopy, free-radical chemistry, transition metal chemistry, computational chemistry, and biochemistry. His current research interest is the computational modeling of halogen atom complexation by halogenated hydrocarbon solvents and the effect of such complexation on H-atom abstraction reactions .

National Chemistry Week 2023

Oct 15–21

Theme: The Healing Power of Chemistry
2023 NCW event @ Science Museum Oklahoma
10:00 am — 2:00 pm Saturday 21 Oct

contact for details or to volunteer

Michael Ferguson (405-974-5391) jferguson@uco.edu

Allen's scientific interests focused on the design and synthesis of new inorganic materials that have a positive impact on society and the environment. At OSU he performed critical investigations into the stability of chemical coatings of materials to improve corrosion resistance, the growth processes and formation of material surface layers, and the development of compounds that can efficiently adsorb heavy metals and excess ions in water treatment processes. In addition to his scholarship, Allen continually strived to advance the education mission of OSU. He enjoyed teaching courses ranging from Introductory Chemistry for first year undergraduates to Environmental and Inorganic Chemistry for advanced graduate students. He delighted in sharing his expertise and knowledge of chemistry with students, regardless of their level of preparation.

Allen enjoyed socializing with his colleagues over coffee or even a beer. He willingly listened and provided advice in teaching, research and grantsmanship. At home, he relaxed on his property which hosts a lake where he liked to fish. Allen was also an avid reader of science fiction.

Nov 15-18, 2023 Omni Hotel Oklahoma City, OK



SWRM 2023

chemistry energized

Southwest Regional Meeting

SWRM 2023 STATUS REPORT

SWRM 2023 is shaping up to be a big meeting. We have 680 abstracts submitted, 400 for talks and 280 for posters. We anticipate the attendance will be 900 or more. To make the meeting a success, we need your help. A small army of volunteers will be needed at the event.

**MANY HANDS MAKE SWRM A SUCCESS!**

We need your help. Many volunteers are needed behind the scenes to keep SWRM 2023 going smoothly. Volunteers should plan to commit to 4-hour time blocks and you can volunteer for multiple times and days. The types of tasks that volunteers will be asked to perform include:



Registration: Meet and greet at the conference registration booth, provide directions and pre-made maps for the conference symposia as well as local eating places and attractions.

Tech Support: On-site tech support is available, but tech-savvy volunteers may be stationed at each symposium to resolve audio-visual issues or be able to quickly summon help when needed.

General Support: This could entail making copies, being sure venues are well supplied by hotel support staff, delivering messages to meeting participants, reporting any observed issues that need ACS support staff attention, or helping as other unanticipated needs may arise.

Choose the times that work best for you by selecting days and time blocks on the volunteer registration form.

*In recognition of your contribution,
you will receive a SWRM 2023 T-shirt.*

Questions? Contact SWRM 2023 Volunteer Coordinator Dana Rundle (drundle@uco.edu)

REGISTRATION

Register now for SWRM 2023 before the early-bird deadline ends on Sep 27.



When you register, you can sign up for the social events and workshops. After you register, you will be able to log in to modify your registration and select or deselect these events. Special social events include the Tuesday evening reception and dinner at the First Americans Museum. Wednesday evening we have a beer-themed talk and testing *Sensory Analysis and Beer Tasting Lexicon* at The Big Friendly. Thursday evening is the Awards Banquet at the Omni.

2023 JOINT MIDWEST & GREAT LAKES REGIONAL ACS MEETING

18–21 October 2023



St. Charles Convention Center, St. Charles, MO
Co-hosted by the St. Louis and East Central Illinois Sections

<https://mwrm2023.org/>



ACS
Chemistry for Life™



CHEMISTRY OLYMPIAD

2024 Calendar

- March — Local Section Competitions
- April — National Exam (exact date TBA)
- June — Study Camp
- July 22–31 — 56th IChO Riyadh, Saudi Arabia

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.

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:

<https://tinyurl.com/4a7nczch>

—Chuck Rice (Awards Committee)



2023 Oklahoma ACS Section Officers and Standing Committee Chairs

Trevor Ellis	Chair
Indrajeet Sharma	Chair Elect
Jeanne L. Bolliger	Immediate Past Chair
Lloyd A. Bumm	Secretary + interim Newsletter ed.
Jason Wickham	Treasurer
Allen Aplett	Councilor
John Michael Ferguson	Alternate Councilor
Charles V. Rice	Awards Com.
Reza Latifi	Chemistry Olympiad Com.
John Michael Ferguson	National Chemistry Week Com.
Cheryl Frech	Public Relations



L. A. Bumm
Oklahoma Section of the ACS
Homer L Dodge Dept of Physics & Astronomy
The University of Oklahoma
440 W Brooks St
Norman, OK 73019-2061

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OK ACS web
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Oklahoma ACS Calendar of Events.

Visit the Oklahoma ACS WWW site for the latest information.

<https://okacs.org/>

CALENDAR OF EVENTS

2023 Dates & Speakers

Sep 15 (Fri) OBU, Family Night
William Kelly, Dept. Physics & Chemistry, SWOSU, Weatherford, OK
The Quantum Mechanics of Hot Peppers

Oct 19 (Thu) NWOSU, Enid, OK
Yitong Dong, Dept of Chem & Biochem, Univ. Oklahoma, Norman, OK
TBA

Oct (15-21) National Chemistry Week
The Healing Power of Chemistry

Oct (18-21) 2023 Joint Midwest & Great Lakes Regional Meeting
St. Charles Convention Center, St. Charles, MO
co-hosted by the St. Louis and East Central Illinois Sections

Oct 21 (Sat) NCW Event at Science Museum Oklahoma

Nov (15-18) SWRM 2023

Omni Oklahoma City Hotel, Oklahoma City, OK
hosted by the Oklahoma section

2024 Dates

Oct (20-24) SWRM 2024

Waco, TX
hosted by the Heart o' Texas section