



# THE DAYTON SECTION

Fostering scientific education and research, and promoting public understanding of science since 1930

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## BULLETIN

Spring-Loaded Edition 2016

## Meetings and Events

May 25: Patterson High School Chemistry Awards

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DATE MATERIAL - MEETING ANNOUNCEMENT - DO NOT DELAY

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## REPORT FROM COUNCIL

During the five days I was in San Diego for the 251<sup>st</sup> Meeting of the American Chemical Society, it was warmer in Dayton, just so you know. I was indoors mostly, anyway. On Sunday, after serving my obligation on the Committee of Constitution and Bylaws – always a thrill a minute – I attended the Town Hall Meeting where nominees for ACS President introduced themselves and answered attendees' questions (thankfully, I refrained from asking, "What will you do to make ACS great *again*?")

Using my patented 3-point scoring system, Peter Dorhout and Thomas Gilbert tied for first place, which is not surprising because both have substantial ACS experience. Gregory Robinson did well in introducing himself to the audience but C. Bradley Moore seemed unprepared, losing track of time in the 90 seconds he had for his opening remarks. My Sunday duties concluded with the District II Councilor Caucus, where it was easy to identify the Councilors that ran unsuccessfully for District-II Director; they came late, each carrying an adult beverage, having first stopped off at the International Activities mixer.

During Wednesday's Council Meeting, the four nominees for ACS President each took the stage to deliver a formal address. C. Bradley Moore went first, this time carrying a Macbook. It didn't help. He lost his place, and then spent an agonizing 20 seconds finding it again. In a preferential ballot, Prof. Moore got just 6 votes. Gregory Robinson introduced himself to Council with very moving statements, such as, "I found that the world of atoms and molecules made more sense than the world I was born into – the Jim Crow South." Both Peter Dorhout and Thomas Gilbert were both very polished in their presentations, mixing humor with humility. In addition to re-introducing themselves to Council, where they are well known, they both presented interesting ideas for ACS's future. I voted for Dorhout and Gilbert. Council concurred, selecting them as candidates for ACS President by wide margins.

ACS President Donna Nelson led a special discussion, which several Councilors complained was too short. Councilors were asked to comment on the following topics:

- a) What factors determine the balance between supply and demand?
- b) What is the employment situation for technicians?
- c) What are benefits and handicaps of possible certification, licensing, and registration of chemical professionals?
- d) Do we prepare our graduates for jobs offered by industry?
- e) What causes young graduate and mid-career chemical professional unemployment, and how can we help?
- f) What is needed to increase underrepresented groups in the workforce?
- g) What global factors influence the US employment situation? Problems of outsourcing and immigration?

In one memorable comment that addressed topic (f), one Councilor claimed that black women chemists were hiding in plain sight. She then chastised Council for never voting for a black woman nominated for ACS President. I also learned about the newest ACS Subdivision – Cannabis Chemistry! (Abbreviated CANN, I wish I had heard about it before the Special Discussion!) CANN is hosted by the Division of Chemical Health and Safety. Go to <http://dchas.org/cann/> for more information.

At the time of Council, total attendees numbered 16,327, with 5,979 students, 1,094 exhibitors, 8,398 regular attendees, and the rest Expo-only attendees and guests. The Career Fair had 739 job seekers vying for 106 jobs from 30 employers. Once again, no employer found my education or experience worthy of a 15-minute interview.

Some of the more mundane actions of Council as well as committee-report summaries appear below:

- Council voted to set the member dues for 2016 at the fully escalated rate of \$166. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.
- After approving an amendment to the proposed revised *Academic Professional Guidelines*, the Council approved the revised guidelines, subject to approval by the Board of Directors. The guidelines apply to those members of the academic community whose job function impacts directly or indirectly on scientists practicing the profession of chemistry.
- Council passed resolutions in memory of deceased Councilors; in gratitude for the officers and members of the San Diego Local Section, host Section for the 251<sup>st</sup> National Meeting; the divisional program chairs and symposium organizers; and ACS staff.
- The Committee on Nominations and Elections solicits Councilors' input of qualified individuals for President-Elect and/or Directors for future consideration. Suggestions may be sent to [nomelect@acs.org](mailto:nomelect@acs.org). N&E has established the Vote 20/20 Task Force, charged with examining all aspects of nominations and elections for ACS national offices, and designing an enhanced process to be in place by the year 2020. The committee welcomes ideas from all members as to how nominations and elections should be handled. Send comments to [vote2020@acs.org](mailto:vote2020@acs.org)
- The Committee on Budget and Finance reported that in 2015, ACS generated a Net from Operations of \$16.6 million, which was \$3.2 million favorable to budget. Total revenues were \$511.7 million, essentially on budget. Expenses ended the year at \$495.1 million, which was \$3.1 million or 0.6% favorable to budget. This variance was attributable to a continued emphasis on expense management across the Society. The Society's financial position strengthened in 2015, with Unrestricted Net Assets, or reserves, increasing from \$144.7 million at December 31, 2014 to \$163.3 million at year-end 2015.
- The Committee on Membership Affairs reported that, as of December 31, the ACS membership was nearly 157,000, which is 0.96% less than on the same date in 2014. The number of new members who joined in 2015 is 25,000. The Society's overall retention rate is 84%. The number of international members has increased to 26,022. That number is 965 higher than in December of 2014. The international growth rate is 3.85%.

*Your faithful Councilor, Steve Trohalaki*

## **UPCOMING MEETING**

**MAY 25**

### ***Patterson High School Chemistry Awards***

**Venue:** 135 Oelman Hall, Wright State University  
**Parking:** Visitor's Lot  
**Social:** 5:30 – 6:00 PM (Food and drink will be served.)  
**Awards:** 6:00 PM  
**Keynote:** *Glen Helen Water Quality: A 5-Year Exploration, 2011-2015*,  
Prof. Audrey McGowin, Dept. of Chemistry, WSU

Originally established by Charles A. Thomas and Carroll A. Hochwalt, former Dayton chemists and Monsanto researchers, the top chemistry students in the area have been recognized under the auspices of the Dayton Section since 1943. In 1990, the family of the late Austin M. Patterson, also a prominent Dayton chemist, assumed sponsorship. All area high school students are invited to take an examination and the highest scoring applicants (\*) are then invited to write essays, which form the basis of the final judging. (These finalists, although only two from each school, are also invited to take the Chemistry Olympiad Exam.) In addition, teachers of the prizewinners receive \$50 awards, and the top scoring student from each high school is awarded a plaque. Grading was performed separately for those students who have only taken one year of chemistry. Students from this group (1) who were the highest scorers in their High School will also receive a plaque. The top three essayists are awarded first, second, and third prizes of \$1000, \$750, and \$500, respectively.

This year's Patterson Scholars are:

Michael Li (*)	Centerville High School
Brian Daniels (*)	Beavercreek High School
Maxwell Venetos (*)	Centerville High School
Vidushi Tripathi (*)	Centerville High School
Amy Wen (*)	Centerville High School
Paddy Fanning (*)	Centerville High School
Roasmiel Ries (*)	Centerville High School
Sachin Shankar (*)	Centerville High School
Nicholas Sprauer (*)	Alter High School
Emily Kuehl (*)	Northmont High School
Samith Venkatesh (*)	Centerville High School
Nicholas Sprauer	Alter High School
Paul Rosenbaum	Oakwood High School
Clayton Hammond	West Carrollton High School
Landon Van Horn (1)	Anna High School
Rachel Goehring (1)	Beavercreek High School
Kevin Yin (1)	Centerville High School
Nikita Krishna (1)	Troy High School
Jaden Fine (1)	West Carrollton High School

Special congratulations go to Beavercreek High School's **Brian Daniels** who qualified to participate in the US National Chemistry Olympiad Study Camp, May 31 – June 15, 2016. Congratulations to all of our Patterson Scholars!

## PAST MEETING — TECHFEST 2016

The Dayton Section of the ACS again presented an exhibit at TechFest 2016, held the weekend of February 14th and 15th at Sinclair Community College's the Ponitz Center. This annual event is sponsored by the Affiliate Societies Council of Dayton for the promotion of science and technology to benefit families and children in the Miami Valley.

This year's TechFest celebrated the "Materials and Manufacturing." With over 2400 attendees, the Dayton Section Exhibit demonstrated carbon nanotubes, superabsorbent polymers (instant snow), and the effect of detergent on milk. Dr. Amit Sharma organized this event, which was staffed by volunteer members and students from the Dayton Section and area universities. The Section owes a debt of thanks to all our volunteers.



Kids expecting to make slime were disappointed while their parents were secretly relieved.



A future materials scientist thinks that graphene is much too large to be used for the next generation of cell phone screens.



Dayton Section volunteers explain that instant snow is not the answer to global warming.



Kindling interest in chemistry was well worth the temporary lower back pain our volunteers felt the next day.



## PAST MEETING

### **Annual Poster Session and Patterson College Chemistry Awards**

This year's Poster Session was held at Central State University. Competing for outstanding poster awards were six graduate students and five undergraduates. A total of 15 posters were presented. Two graduate students and two undergraduate students received \$100 outstanding poster awards.

#### **Outstanding Undergraduate Posters:**

*Dioxyalkylene PEEK Polymers Containing Vanillin Subunits*, James Herbort, Wright State

*Fabrication of a gold nanoparticle-functionalized paper microfluidic device for the detection of biomarkers from whole blood*, Anna Gutridge, Wittenberg University

#### **Outstanding Graduate-Student Posters:**

*Synthesis, Characterization, and Polymerization of Sulfonamide Based Bifunctional Monomers*, Brady Hall, Wright State University

*Polymerization of PEEK AA+BB monomers containing meta-substituted oxyalkylene linkages*, James Ohaeri, Wright State University

We also presented three Patterson College Chemistry Awards to outstanding chemistry majors in their junior year. The award consists of a certificate and a check for \$400. This year's winners are:

Phuc (Leo) Vo, Wittenberg University

Michael Coladipietro, University of Dayton

Karen N. Sulek, Cedarville University

Kristy Rochon, Central State University

Nick Yahna, Wright State University



WSU's winning students mug for the camera.



Wittenberg University's Anna Gutridge receives her outstanding poster award.

**Alzheimer's Avoidance Therapy\*** Unscramble the letters to reveal a chemical or a middle name of a famous chemist. Then, use the circled letters to solve the riddle. Answers next edition!

A D I L L R W      ○ □ ○ ○ □ □ □

D E I I N O      ○ ○ ○ □ ○ ○

A F L M O R W      ○ ○ □ □ □ □ □

Schrödinger is out for a drive when a cop pulls him over. The cop asks Schrödinger, "Do you know how fast you were going back there?" Schrödinger replies, "You're confusing me with Heisenberg." The cop says, "A wise guy, huh? Get out of the car and spread 'em." The cop proceeds to search the car, and upon opening the trunk exclaims, "Hey, you got a dead cat back here!" Schrödinger replies,

"○ ○ ○ ○, ○ ○ ○ ○ ○ ○ ○ ○ ○ ○!"

**Answers for Last Edition**

SILICA PHTHALATE SULFUR

Newton, Pascal and Einstein play a game of Hide and Seek (Physics Rules). Newton and Pascal shout out, "Not it!" so Einstein is 'it.' He closes his eyes and starts to count. Pascal runs off and hides behind a tree while Newton draws a square box around him with 1 meter on each side. Einstein finishes counting, spots Newton right away, and says to himself, "Ah, very clever." Then he shouts out, "PASCAL IS IT!"

**AAT-2 – Su Doku for Chemists!**

Using the following nine chemical elements:

La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb
----	----	----	----	----	----	----	----	----

fill in the grid below so that each row, column, and 9-element subcell has only one occurrence of each element.

		Sm			Ce	Nd	Tb	
								Pm
		Gd		Eu				
		La			Eu		Pr	
				Pm		La	Nd	
	Ce	Nd	Sm		Tb			
Eu					Sm			
				Pr			Gd	
		Tb	Ce			Sm		

**Quotable Quotes for \$1000, Alex!**

"I wish the President and the whole damned government would go to hell."  
– John Wilkes Booth

"What are actors, anyway? Mummies of the quality of skimmed milk. They know little, think less, and understand next to nothing."  
– John Wilkes Booth

"Sic semper tyrannis!"  
– John Wilkes Booth

"Madame I am Pondofio Pet – Pedofio, Pat –Pantuchio, Ped – Dammit! Who am I?"  
– John Wilkes Booth

"Why the hell would we move to a table? We got a booth here!"  
– Frank Costanza

**Solution for Last Edition**

Cu	Co	Ti	Fe	Ni	V	Mn	Sc	Cr
Fe	Sc	V	Mn	Cr	Co	Ti	Cu	Ni
Ni	Mn	Cr	Sc	Cu	Ti	V	Fe	Co
V	Fe	Mn	Cr	Sc	Cu	Ni	Co	Ti
Co	Ni	Cu	Ti	V	Fe	Sc	Cr	Mn
Cr	Ti	Sc	Ni	Co	Mn	Cu	V	Fe
Sc	Cr	Fe	Cu	Ti	Ni	Co	Mn	V
Ti	Cu	Co	V	Mn	Cr	Fe	Ni	Sc
Mn	V	Ni	Co	Fe	Sc	Cr	Ti	Cu

\*Surveys suggest that mental exercises, including word puzzles, may delay the progression of Alzheimer's Disease.