



THE DAYTON SECTION

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

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BULLETIN

Hellish Summer Edition 2011

Meetings and Events

Sept. 17: Celebrate Summer's Accomplishments at the
Seventh Annual Section Picnic of the New Era!

Oct. 28: *Doping in Sports: How Chemists Catch the Cheaters
(Sometimes)*, Friday afternoon at Wright State Univ.

Section News and Other Stuff

- Nominees Sought for Chair-Elect and Secretary — page 4
- National Chemistry Week — page 4
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DATE MATERIAL - MEETING ANNOUNCEMENT - DO NOT DELAY

ADDRESS SERVICE REQUESTED

American Chemical Society
Dayton Section
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UPCOMING MEETING

SEPTEMBER 17

SEVENTH ANNUAL SECTION PICNIC OF THE NEW ERA

Where: Community Park, Shelter #1, E. Dayton-Yellow Springs Rd. Fairborn (See directions and map below.)

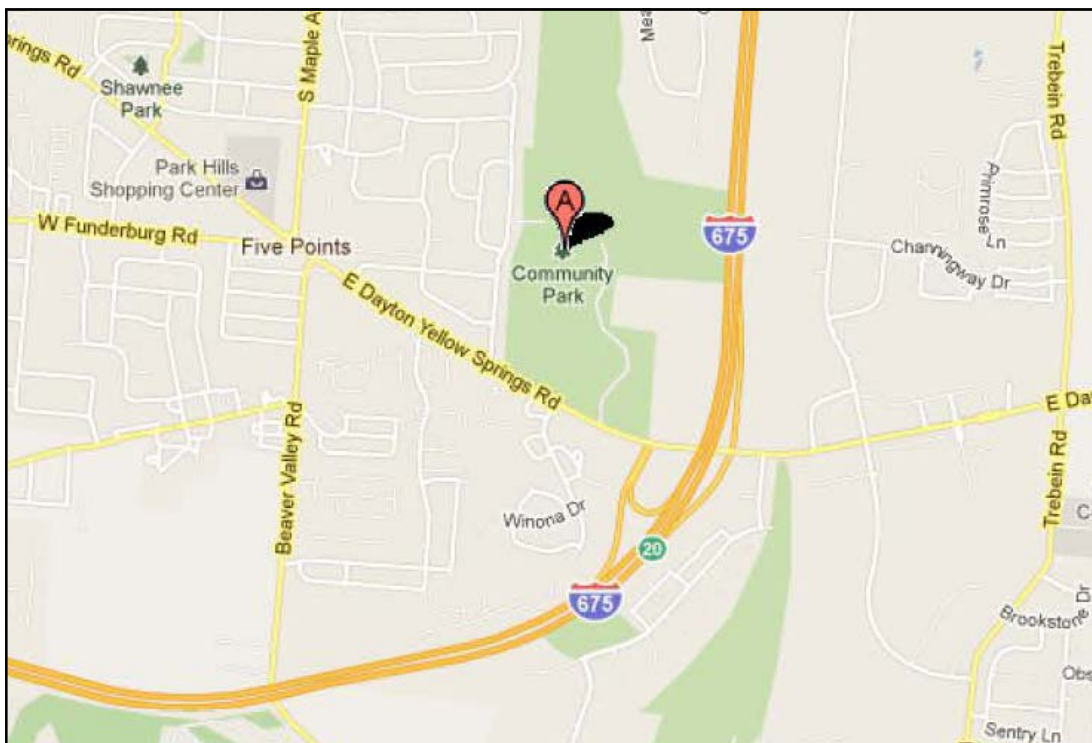
When: 11:00 AM – 3:00 PM, Rain (unless an incessant downpour) or Shine!

We'll continue our revival of an old tradition with a picnic at a *new, very convenient location* for all Section Members, their families, and prospective Section Members, e.g., students. The Section will provide hamburgers, hot dogs, brats, veggie burgers, and soft drinks. Please bring a side dish or a dessert (especially if you bake; Brownies, no icing, with extra nuts would be great) to share.

Those of us with kids will bring the typical stuff — soccer balls, footballs, Frisbees, badminton, and softball equipment — while those with peculiar Ohio personalities will haul out home-made corn hole sets, but be forewarned — Fairborn rules apply under penalty of law — but feel free to bring your favorite sports paraphernalia (except firearms). Singles will bring their hangovers (door prizes will be awarded to those whose walk of shame leads them directly to the picnic, with perhaps just one side trip for a Bloody Mary, or other hair-of-the-dog remedy).

For planning purposes, let us know if you'll attend and the number in your party; contact Vladimir Benin at 229-4762, vladimir.benin@notes.udayton.edu or Suzanne Seleem at 376-6689, sseleem1@aol.com. Let us know, too, if you're a better grill cook than Steve, who intentionally drops meat on the ground so that he can bring it home to his dog, and who has periodically demonstrated pyromaniacal tendencies.

Directions: Take 675 to Exit 20 (just three miles north of the North Fairfield Rd. exit) and make a left onto E. Dayton-Yellow Springs Road (whether you coming from the north or the south). You'll see Fairborn High School on your right and then you'll see Community Park, also on your right. Shelter #1 is hexagonal and is to the left of the park entrance. Look for the Dayton Section ACS Banner!



UPCOMING MEETING

OCTOBER 28

DOPING IN SPORTS: HOW CHEMISTS CATCH THE “CHEATERS” (SOMETIMES)

A Joint Meeting with the Department of Chemistry, Wright State University

Speaker: Prof. Tom Werner (retired), Union College, Schenectady, NY

Where: Room 165, Brehm Laboratories, WSU

When: 3:30 PM but come early for refreshments

Directions: <http://www.wright.edu/aboutwsu/maps/>

Parking: Obtain at no charge a visitor permit from the attendant in the Lot-2 booth (take Colonel Glenn Hwy to University Blvd.; Lot 2 is on the right) and then proceed to park in a visitor space in lots 9, 10, 11, 15, or 20.

Abstract

Jacques Rogge, President of the International Olympic Committee said, “Doping is to sport what criminality is to society, and there will always be criminality in society.” The alleged use of performance-enhancing drugs is increasingly tainting athletic accomplishment. Examples of this sports “doping” problem appear almost daily in the news: pro cycling is brought to its knees by doping allegations, resulting in the loss of sponsorship, the BALCO case and the Mitchell Report pummel Major League Baseball with evidence of steroid use and drug testing concerns become a higher profile issue at the Olympics. The talk will focus on the methods that chemists use to detect sports doping with substances such as amphetamine, steroids, human growth hormone and EPO. Limitations of these methods will be discussed, along with a listing of some of the enormous challenges facing chemists as newer doping substances and methods become available. The talk is based on a course entitled Chemistry and Athletic Performance, which was developed by the speaker with the aid of Dr. Don Catlin and staff at the UCLA Olympic Analytical Laboratory and Anti-Doping Research, Inc.

Biography

Tom Werner received a B.S. in chemistry from Juniata College and a Ph.D. in analytical chemistry from MIT. After postdocs at Harvard and Tufts Medical Schools, he taught for 36 years at Union College (Schenectady, NY), retiring as Florence B. Sherwood Professor of Physical Sciences Emeritus in December, 2007. Werner has served as Principal Investigator on several external grants awarded for the support of undergraduate research including funding from Petroleum Research Fund, Research Corporation, NSF-ILI, NSF-AIRE and the Camille and Henry Dreyfus Foundation. Werner served as Chair of the Board of Governors of the National Conference on Undergraduate Research (NCUR), as Director of the NCUR/LANCY Initiative and as a NCUR Board Member. In 2002, he received the American Chemical Society Award for Research at an Undergraduate Institution. Near the end of his Union career, he developed a course entitled “Chemistry and Athletic Performance” that combined his expertise in analytical chemistry and interest in sports with the goal to teach chemistry from a more socially relevant perspective. The course syllabus was developed with input from Dr. Don Catlin and his staff at the UCLA Olympic Analytical Lab and Anti-Doping Research, Inc.

PAST MEETING

MOLECULES TO MOZZARELLA: THE CHEMISTRY OF CHEESE

On the evening of May 16th, Dayton Section Members and other interested parties came out of the woodwork to sample some complimentary cheese and wine at Rumbleseat Wine Co. on Far Hills Ave., Dayton. They also got to hear a very interesting talk on the Chemistry of Cheese by Dr. Michael H. Tunick, a chemist at the U.S. Department of Agriculture. While those attending may never eat American Cheese again, they will surely appreciate better a larger variety of cheeses after educating their palates. It was somewhat embarrassing to see so many chemists get tipsy on just one glass of wine, although it might be preferable to the spectacle of frenetic chemists hopped up on caffeine that many of us observed at the *Chemistry of Coffee* talk a few years ago.

Desperately Seeking Nominees!

Next year's vacancies are **Chair-Elect** and **Secretary**. So far, the Section's Nominating Committee hasn't identified *anyone* for either office — nada, none, zilch!

Upon election, the Chair-Elect will serve as an understudy to the Chair in 2012, as Chair in 2013, and as Immediate Past Chair — mostly an advisory role — in 2014. The four-five Section meetings per year are organized by Committee Chairs, so all the Chair really does is sit back, bark out orders, and complain that the beer brought to the Board Meetings isn't cold enough and that someone ate the variety of pretzels that he/she is particularly fond of. If you like telling others what to do and then getting all the credit, then you are the perfect person to assume this role. If, on the other hand, you're the meek, easily frightened type, then Secretary is the ideal position for you. In either case, contact Jim Carey (at 513-241-2324 or jcarey@whepatent.com) to nominate yourself.

National Chemistry Week 2011: "Chemistry — Our Health, Our Future!"

As in years past, we'll have two events:

- ◆ The first is a free event on Saturday, October 15, 1:00 — 4:00 PM at the Centerville Library, 111 W. Spring Valley Road.
- ◆ The second event will be Saturday, November 5 and Sunday, November 6, noon — 4:00 PM at the Boonshoft Museum of Discovery, 2600 DeWeese Parkway, Dayton. Museum admission is required.

Explore the positive impacts of chemistry as it relates to nutrition, hygiene, and medicine. Come out and participate in our activities! For more NCW information, go to <http://www.chemistry.org/ncw>.

We need volunteers to help the Section with either event. If you are interested in helping out please call Joy Haley at (937) 255-9896 or e-mail Joy.Haley@wpafb.af.mil to let her know which day you are available and a time frame.

PAST MEETING

PATTERSON HIGH SCHOOL CHEMISTRY AWARDS

Continuing a tradition that began in 1943, Dayton Section members convened at the University of Dayton on the evening of June 14th for the Patterson High School Chemistry Awards. The ten students who scored highest on a standard chemistry exam were invited to write essays on what chemistry means to them. The essays were ranked by a committee formed by the Dayton Section, with the top three awarded prizes of \$1000, \$500 and \$250 for 1st, 2nd and 3rd place, respectively.

In his keynote address, *The Chemistry of Alternative Transportation Fuels*, Dr. James T. Edwards of the Air Force Research Lab outlined some very challenging and very interesting chemistry that will need to be accomplished if alternative fuels will prevail. We trust that our awardees will be up to the task.

This year's winners, their essays, their High Schools (and their teachers) are:

- First Place:** Michael Jacobs, *The Glue Never Fails*
Centerville High School (Bonnie Buddendeck and Julie Summers)
- Second Place:** Emily Briskin, *My Favorite Pair of Blue Jeans*
Centerville High School (Bonnie Buddendeck and Julie Summers)
- Third Place:** Michael Wang, *The Lowly Catalytic Converter*
Beavercreek High School (Tejinder Rattan)

The Section thanks the Patterson High School Chemistry Awards Committee, The Education Committee, the volunteers who read and ranked the essays, and, of course, the Patterson Family.



The award winners and their parents assemble in the atrium at UD's Science Center, while Section Members scarf down the best free pizza in Dayton.



For a moment, Vladimir wondered why Robert Plant was at the meeting.



While the second-place check will buy several pairs of new blue-jeans ...



... the third-place check will only make a down payment on a new catalytic converter.

Alzheimer's Avoidance Therapy* Unscramble the letters to reveal chemical names or concepts. Then, use the circled letters to solve the riddle. Answers next edition!

DIMOSU ○ □ □ ○ ○ ○
 1CEEENT ○ - ○ ○ □ □ □ □
 3K3 ○ ○ □

After 3 hours 43 minutes of war, betrayal, deception and death (not necessarily in that order) up on the big screen, Vivien exclaims, "Tara! Home. I'll go home. And I'll think of some way to get him back. After all, tomorrow is another 794243384928000 cycles of radiation corresponding to the transition between two energy levels in an atom of

○ ○ ○ ○ ○ ○ - ○ ○ ○ !"

Answers for Last Edition

ALKYNE GUANINE FURAN
 A mushroom walks into a bar. The bartender turns to him, snorts loudly, then yells, "Get out!! We don't want your kind here!" The mushroom is quite taken aback, and says, "Why not? I'm
A FUN GUY!

(AAT expanded somewhat into Biology with this puzzle. After all, Chemistry is the central science.)

AAT-2 – Su Doku for Chemists!

Using the following nine chemical elements:

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu
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fill in the grid below so that each row, column, and 9-element subcell has only one occurrence of each element.

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

Quotable Quotes for \$2000, Alex

- "Competition is a sin" John D. Rockefeller
- "I find capitalism repugnant. It is filthy, it is gross, it is alienating... because it causes war, hypocrisy and competition " Fidel Castro
- "Number one, cash is king... number two, communicate... number three, buy or bury the competition." Jack Welch
- "I have been up against tough competition all my life. I wouldn't know how to get along without it." Walt Disney
- "I guess your mother was right. You never could compete with Lloyd Braun!" Frank Costanza

Solution for Last Edition

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

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