

The Chemical Record

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Columbus Section of the American Chemical Society, Inc.

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ABOUT THE COLUMBUS SECTION



The Columbus Section of the American Chemical Society comprises approximately 1,500 members who live and work in the following central Ohio counties: Delaware, Fairfield, Fayette, Franklin, Hocking, Knox, Licking, Madison, Marion, Morrow, Muskingum, Perry, Pickaway, Ross, and Union.

The Mission of the American Chemical Society (ACS) is to encourage in the broadest and most liberal manner the advancement of the chemical enterprise and its practitioners. Toward that end, the ACS advances scholarly knowledge, provides professional services and support, communicates with varied audiences, and is actively involved in the science, education, and public policy arenas.

The Columbus Section of the ACS adheres to this mission and the strategic thrusts of the national organization and leadership by providing programs and networking opportunities for Chemistry professionals in Central Ohio.

We invite ACS members and scientists in the community to lend their expertise and talents to our activities in science education, government and legislative policy issues, safety in our industrial plants and in our communities, and care of our land.

MEETING NOTICE



Columbus Section of the American Chemical Society, Inc.
Meeting #863
columbus.sites.acs.org

Professor E. Scott Bair

Ohio State University Geology Department

The Science and Fiction of Hydraulic Fracturing

Tuesday, April 23, 2013

Clintonville Woman's Club
CWC
3951 North High Street
Columbus OH, 43214

PROGRAM DETAILS

5:00 – 6:00 PM	Executive Committee Meeting—CWC Library <i>All Section members are welcome to attend.</i>
6:00 – 7:00 PM	Social Hour—appetizers and beverages
7:00 – 7:45 PM	Dinner – Mixed Field Green Salad with Seasonal Fruit Choice of entrée <ul style="list-style-type: none">• Slow roasted Black Angus Boneless Braised Beef• Flounder baked in lemon butter sauce stuffed with crabmeat and vegetables• Vegetarian entrée available upon request. Dessert Buffet
7:45 – 8:45 PM	Program <ul style="list-style-type: none">• Presentation of the Columbus Section High School Teacher Award• E. Scott Bair: <i>Fracking—A Scientific Overview</i>



Cost	\$20 per person members and non-members, \$10 for retired and unemployed members, \$5 per student. New members are free! Payment will be collected at the door; cash and checks accepted. There is no cost to attend the program only. <i>Remember that this is a dinner order and must be paid. Please help control costs by honoring your order.</i>
RSVP	Please use the voicemail reservations service by calling 614-447-3600 extension 7047. Follow the template for reservations*. Alternatively, please send e-mail with the same information to The Columbus Section at the following e-mail address: acscols@wowway.com or use the Meeting Reservation Form on the Section's website.
*Voicemail/e-mail Reservations Template	<ul style="list-style-type: none"> • First and last name: Please spell last name. • Membership category: member, non-member, retired, emeritus, unemployed, student, high school teacher • <i>Note: High school teachers are guests of the Section for dinner at this meeting, but must make reservations.</i> • Employer • Your choice of entrée: Braised Beef, Baked Flounder, or Vegetarian • Please indicate if you will join us for the <u>Dinner & Program</u> OR <u>Program Only</u> • Your phone number, in case we need to contact you.
Reservation Deadline	Friday, April 12, 2013 at 3:00 PM
Program Contact	David R. Speth , 989-430-5123; drspeth@sbcglobal.net
Directions & Parking	<p>From the North Take Route 315 south to the Henderson Road exit. Turn left onto Olentangy River Road. Turn left onto Henderson Road and cross under Route 315. Turn right onto North High Street. Clintonville Women's Club is about 0.6 miles south on the right just before Whetstone Park close to the Whetstone Library.</p> <p>From the East Take I 670 west to I 71 north to Exit 114-North Broadway. Turn left onto East North Broadway. Turn right onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just after Whetstone Park close to the Whetstone Library.</p> <p>From the West Take Fishinger Road to Kenny Road. Turn left on Kenny Road and then turn right onto North Broadway. Take North Broadway to North High Street. Turn left onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just after Whetstone Park close to the Whetstone Library.</p> <p>From the South Take Route 315 north to the North Broadway-Olentangy River Road Exit. Stay right and merge onto North Broadway. Turn left onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just after Whetstone Park close to the Whetstone Library..</p> <p>Parking is free.</p>

ABOUT THE PRESENTATION:

THE SCIENCE AND FICTION OF HYDRAULIC FRACTURING

Fracturing oil and gas bearing rocks to increase well yield is a practice almost as old as the first deliberately drilled production well in 1858 outside Oil City, Pennsylvania. Hydraulic fracturing, or fracking, uses pressurized water, sand, and an assortment of dissolved chemicals (acids, petroleum distillates, salts) to fracture the rocks, prop open the fractures, and enhance release of the hydrocarbons.



Fracking is the latest in a long lineage of techniques including nitroglycerin and trinitrotoluene. Unlike the older methods, fracking produces a "predictable" pattern of fractures perpendicular to the borehole. Fracture patterns are determined by the physical properties of the rock, degree of rock layering, depth below land surface, and the presence, orientation, and spacing of existing fractures. Recent technologies enable multiple boreholes to be drilled vertically from a single location and curve to horizontal to intercept the target horizon. This is an exceptionally effective approach to removing recalcitrant gas and oil contained in organic-rich shales. Oil shale deposits occur in 24 states in the U.S. and represent a supply of hydrocarbon-based energy that could last more than a century in the future and lead the U.S. into a period of energy independence. The controversy over fracking is in the need for millions of gallons of water to frack a single horizontal well and the use of toxic chemicals in the frackwater that may possibly escape the target horizon along generated fractures connected to existing fractures and faults. As a result, hydrocarbons and toxic chemicals may enter shallow, public groundwater supplies.

ABOUT THE SPEAKER:
PROFESSOR E. SCOTT BAIR

Scott Bair is Professor of Hydrogeology in the School of Earth Sciences at Ohio State. Prior to joining the OSU faculty in 1985, he worked for Stone & Webster Engineering Corporation and for the U.S. Geological Survey. His expertise is in the movement of earth fluids through porous and fractured media. He has advised 37 M.S. and Ph.D. students using grants from the NSF, USEPA, USDA, USDOE, USGS, Ohio DNR, and Ohio EPA. He served on federal review panels examining the cluster of male breast cancers at Camp Lejeune, North Carolina, and the design, construction, and impact of hazardous waste injection wells. In March, he was appointed to the USEPA Hydraulic Fracturing Science Advisory Panel.

WELCOME NEW MEMBERS!
BY DAVID SPETH, SECTION CHAIR

Please join us in welcoming the following members who have joined the Section recently: The Columbus Section cordially invites new members to our monthly meetings. The Section will pay for new members' meals the first time they attend a meeting.

CHRISTOPHER ANDERSON
SARAH BORDER
CHRISTOPHER CALLAM
ERIC COLEMAN
KRISTA CUNNINGHAM
JOSELYN DEL PILAR
ROBERT DELCAMP
ZACH FALTHER
KEVIN FENK
ALYSA FRANK
ARTHUR GEUTERL
ELIZABETH HOMMEL
WEI HUA

TRENT DAUBENMIRE
ZISHUAI HUANG
BELINDA HURLEY
MARY JONES
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ARIEL MOORE
PALAMIKKUMARAN MUTTHIAH
CARRIE NELSON
CHINH NGO

BENJAMIN MOHR
XIAOWA NIE
CHAU PHUNG
ANDREW PILLE
JOE SJOSTROM
RONALD SMITH
JOHN SPROUSE
BETHANY STEELE
MATTHEW STEVENSON
GAN WEI
MINGZHI YU
YAGONG ZHENG
MENGQI ZHOU

NOTE FROM THE CHAIR
By DAVID SPETH

We had another successful meeting in March. After an introductory presentation by **Professor Giorgio Rizzoni**, we had a tour of the Ohio State Center for Automotive Research. We were able to see their testing facilities and the numerous projects the students are assembling including the Buckeye Bullet III that will attempt to set the electric vehicle land speed record (over 400 mph) in August at Bonneville, UT.

We have three activities coming up in April. On Saturday April 13 we will be participating in Chemistry Discovery Day activities at COSI. Discovery Day has been organized to attract junior high school students to the joys of careers in science, engineering and math. Since this year's program is focused on chemistry, the Local Section chose to provide financial support in addition to providing volunteers to talk about their career in science. The Chemistry Olympiad in Columbus will also be held April 13 at Worthington High School. If you are free on the 13th, please come and join us at one of these activities.

Our April meeting will be on Tuesday the 23rd at the Clintonville Woman's Club. The meeting will have two focal activities. The first will be presentation of the Columbus Section High School Teacher of the Year to **Julie Bleivins** of Dublin Scioto High School. The second event will be a presentation by OSU Earth Sciences **Professor E. Scott Bair** on a topic that has been in the news recently "The Science and Fiction of Hydraulic Fracking.

As always the Executive Committee welcomes suggestions for speakers and other programs for the Section. We are also looking for volunteers to help with Local Section activities. Any contribution you have time to make will be welcome. The Section also has some funds to support chemistry related activities that members undertake with outside groups. If you have something you would like to do please let me know.

STATE SCIENCE DAY 2013: VOLUNTEERS NEEDED!
By WENBIN QI



On Saturday, May 11th, State Science Day 2013 will be hosted by The Ohio State University at the French Field House in Columbus – just up the road from the 'Shoe. Since 1998, as part of its commitment to chemical education at all levels, the Columbus Section has sponsored awards for outstanding projects in the chemical sciences. The objective is to acknowledge and reward those students who have not only understood the scientific method, but also have exhibited creative thought.



Clearly, these students are some of the best that Ohio has to offer and already are showing an interest in chemistry. What better way to encourage these youngsters and expose them to the human face of the chemical enterprise? Professors and employers, it might also be a good way to do early recruiting for future students and interns.

WE NEED YOUR HELP !!!


As you can imagine, the number of projects is large (~140) and we need around 30 judges to evaluate them and decide on the winners. A general knowledge of some branch of chemistry is desirable, but being a chemist or ACS member is not required. But even limited knowledge in one area can be supplemented and effectively utilized through interactions with judges having complementary skills.

Judging is scheduled to run from 9:00 a.m. to noon. Refreshments and orientation will occur from 7:00 to 8:30 a.m., and you really need not be there much before 8:00 a.m. in order to get a clear idea of what will be happening that morning. You will be well-informed in advance. All of the judges in the past few years have thoroughly enjoyed the experience.

Please consider taking one morning out of the entire year to offer encouragement and advice to someone who could be taking the first steps in an illustrious career. If you would enjoy the opportunity to meet the next generation of chemical scientists, e-mail me, **Wenbin Qi**, at qiwenbin@gmail.com.

Refer to The Ohio Academy of Science Web site www.ohiosci.org/ssd.htm for more details.

COLUMBUS SECTION ACS CALENDAR OF EVENTS

Year	Month	Date	Day	Location	Comments
2013	April	12	Fri		3:00 PM: Deadline for reservations for April, 2013 Section Meeting
2013	April	13	Sat	COSI	<i>Chemistry Discovery Day.</i> See details elsewhere in this issue of <i>The Chemical Record</i> and at http://www.cosi.org/families/explore-careers/discover .
2013	April	13	Sat	Worthington High School	Chemistry Olympiad 2013. See details elsewhere in this issue of <i>The Chemical Record</i> .
2013	April	16	Tue	OSU Chemistry Department	Annual Shore Lecture, presented by Nobel Laureate Dr. Robert Grubbs . See details elsewhere in this issue of <i>The Chemical Record</i> .
2013	April	23	Tue	Clintonville Woman's Club	Monthly Section meeting: See details elsewhere in this issue of <i>The Chemical Record</i>
2013	May	11	Sat	OSU French Field House	State Science Day. Volunteers are needed to help judge the projects; see details elsewhere in this issue of <i>The Chemical Record</i> .
2013	May	15-17	Wed-Fri	Central Michigan University, Mt. Pleasant	44 th ACS Central Regional Meeting: <i>Building Blocks for a Sustainable World</i> . See http://2013.cern.sites.acs.org for more details.
2013	September	8-12	Sun-Thu	Indianapolis	246 th ACS National Meeting and Exposition
2013	October	20-26	Sun-Sat	Here, There, Everywhere!	 National Chemistry Week 2013. This year's theme is <i>Energy: Now and Forever!</i> , exploring chemistry and energy with a focus on sustainable resources Stay tuned for information on Columbus Section activities and volunteer opportunities!
2013	October	26	Sat	Main Branch, Columbus Metropolitan Library	NCW interactive chemistry demonstrations for children of all ages. Volunteers are needed; contact Professor John Blaha (Jblaha@csc.edu) for more information.
2013	November	16	Sat	COSI	Chemistry Day celebration at COSI. Stay tuned for details.
2014	March	16-20	Sun-Thu	Dallas	247 th ACS National Meeting and Exposition
2014	August	10-14	Sun-Thu	San Francisco	248 th ACS National Meeting and Exposition



DISCOVER...CHEMISTRY! AT COSI

Editor's Note: I had to copy this from a pdf, and the imbedded hyperlinks do not work. Visit <http://www.cosi.org/families/explore-careers/discover> for additional information.

Make a difference in a young person's life...



Be a volunteer at COSI's
Discover...Chemistry!
Program

Saturday, April 13th

As you well know, chemistry is a diverse and exciting field. As we grow as a nation, the need for versatile scientists is growing as well. Our future scientists are currently sitting in their school classrooms wondering what to do next. That is where you come in! By seeing positive role models working in chemistry, students are more likely to see themselves as working in that field in the future.

At **Discover... Chemistry!** on April 13, 2013, middle-school students will discover how chemistry is involved in almost every aspect of our lives. With your help, they will learn how *they* can become chemists. Volunteer to be a workshop presenter and introduce these students to careers in your field. No experience with presentations of this type? Don't worry, we can help! We'll give you presentation tips and provide hands-on activities if you need them. Anything we can do to help, we will! Join us and help influence future chemists at COSI!

For more information about the program and how to volunteer, contact Amy Parker, Director of Teen Programming at aparker@mail.cosi.org, or at 614-629-3159.

Read more: <http://www.cosi.org/families/explore-careers/discover>



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ABOUT THE CHEMICAL RECORD

The Chemical Record, official newsletter of the Columbus Section of the American Chemical Society, Inc., is published monthly, February-May and September-December (eight issues per year.) Opinions expressed by editors or contributors do not necessarily represent the official position of the Columbus Section or of the editorial staff. We welcome your contributions to your *Chemical Record*. Please submit them via postal or electronic mail to **George Greene**, PO Box 360941, Columbus, Ohio 43236-0941, george.greene@abbott.com. Electronic mail contributions should be in MS Word file attachments (preferred) or plain-text messages. *Thank you very much!*

CHANGE OF ADDRESS

Changes in postal or e-mail address should be reported to the Membership Chair, **David Speth**, 614-688-5162, drspeth@sbcglobal.net. David will forward the change-of-address information to ACS Headquarters.

ADVERTISING RATES

Advertising rates for *The Chemical Record* are as follows (per single insertion): Full Page, \$250; Half page, \$150; Quarter Page, \$120; Eighth Page: \$60; Business Card, \$50. Discounts: 5% for four insertions or 10% for eight insertions during a calendar year. There is no charge for "help wanted" ads.

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