

# CINTACS



Newsletter of the Cincinnati Section of the American Chemical Society

January, 2009  
Vol. 46, No. 4

## Meeting Calendar

Jan. 14	Prof. Sara Risch Science by Design / MSU @ Givaudan
Feb. 11	Chemist & RA of the Year @ Miami University
Mar. 11	S. Corriher, Food Chemist Joint with Dayton section
Apr. 15	Education Awards Night @ NKU
May [?]	Party Night Riverboat cruise or Reds ballgame

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## January Monthly Meeting Wednesday, January 14, 2009

**Givaudan Flavors**  
**1199 Edison Dr.**  
**Cincinnati, Ohio**

*Sponsored by Givaudan Flavors*  
*With additional contribution from Iota Sigma Pi*

**Speaker: Dr. Sara Risch, Science By Design**  
**Recently of Michigan State University**

## Program

5:30 – 7:00 pm	Registration
6:00 – 6:30 pm	Board Meeting CDR #1
6:00 – 7:00 pm	Social Hour: Cheese with crackers and grapes, veggies with dip, punch, iced tea, soft drinks
7:00 - 8:00 pm	Buffet Dinner: House Salad, Sliced Roast Beef au jus and Horseradish Cream Sauce, Stuffed Chicken Breast, Steamed Vegetables, Roasted Red Skin Potatoes, Assorted Gourmet Cheesecakes and coffee.  \$25.00 (\$15.00 students, emeritus, unemployed and new members)  8:00 pm Speaker: Dr. Sara Risch, "Flavor Chemistry"

*(Continued on page 3)*

**THE CINTACS NEWSLETTER****Vol. 46, No. 4 January, 2009**

Editor.....Kevin Ashley  
 Advertising.....Ed Hunter

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**From the Chair**

The January 14<sup>th</sup> meeting will be held at Givaudan Flavors. Appreciation goes to Phil Christenson for making the arrangements at the Givaudan research center. Also, many thanks to the meeting sponsor, Givaudan Flavors, with additional contribution from Iota Sigma Pi.

The January speaker is Dr. Sara Risch, a food chemist with Science By Design and recently of Michigan State University. She will talk on The chemistry of Taste and Aroma . [Maybe she'll give us some pointers on Cincinnati chili & Goetta?]

The ACS President-Elect, Prof. Joseph Francisco of Purdue University, gave two very interesting talks at our December 4<sup>th</sup> meeting at Xavier University: one on Atmospheric Chemistry and the other on Achieving Diversity in the Sciences. Thanks to all of you who attended in making it a very successful meeting.

The February 11<sup>th</sup> meeting at Miami University in Oxford will honor our Cincinnati Chemist and the Research Associate of the year.

I'll see you January 14<sup>th</sup> at Givaudan Flavors in welcoming Sara Risch to Cincinnati.

- Roger Parker



*(Continued from first page)*

**January Monthly Meeting: Flavor Chemistry  
Dr. Sara Risch**

*Sponsored by Givaudan Flavors  
With additional contribution from Iota Sigma Pi*

**Wednesday, January 16, 2009 @ Givaudan Flavors  
1199 Edison Dr., Cincinnati, Ohio**

**Please Register Online** at [www.ascincincinnati.org](http://www.ascincincinnati.org). Alternatively, you may email the webmaster at [webmaster@ascincincinnati.org](mailto:webmaster@ascincincinnati.org) to register, or call Roger Parker at 513.771.3613.

The deadline for reservations is 12:00 noon on Friday, Jan. 9.

**Directions:**

From I-75 North, take the Towne Street exit. Go right at the end of the exit. Turn left at the light onto Paddock Rd. At the first light, turn left onto Edison Drive and enter the TechSolve Research Park. Givaudan Flavors is on the left; however, continue on Edison past the visitors entrance and park in the employee parking lot, which is behind the building. Use the entrance near the south end of the parking lot. The entrance will be marked.

From I-75 South, take the Paddock Rd exit and turn left at the end of the exit onto Paddock Road. Turn right at the third stoplight onto Edison Drive and continue as above.

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**Biographical sketch of Dr. Sara Risch**

Sara Risch is with Science by Design and was recently a professor at Michigan State University. She was Director of the School of Packaging at MSU from 2004 to 2006. Prior to joining Michigan State, Sara had her own consulting business where she worked with food, flavor and packaging companies on product-package compatibility as well as new product development. She also spent five years as Director of R&D for Golden Valley Microwave Foods (now part of Con-Agra Snack Foods). She is active in the American Chemical Society and is currently a Councilor for the Agricultural and Food Chemistry Division and vice-chair of the Committee on Nominations and Elections. She is a professional member of the Institute of Food Technologists, serving on the Committee on Divisions and on the executive committees for both the Food Packaging and Food Chemistry Divisions. Sara received her B.S and Ph.D. degrees in Food Science from the University of Minnesota as well as an MS in Food Science from the University of Georgia.

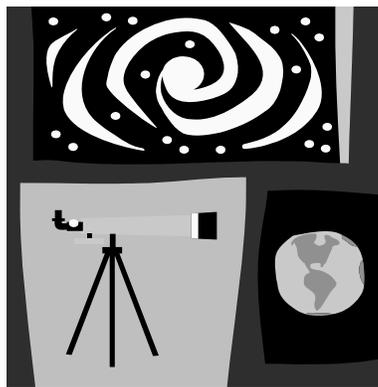


**Dr. Risch's abstract:****Flavor Chemistry (Chemistry of Taste and Aroma)**

We eat food for basic nourishment but also for the enjoyment that it gives us. One big part of that enjoyment is the flavor of the food. Many people will try a product once, but if it doesn't taste good, they will not try it again. Flavor chemistry is a fascinating area of research covering the analysis of what contributes to the flavor of the products that we eat to development of flavors that will work in a wide variety of products to the quest for new and unique flavors. As an example of what contributes to the flavor of a product, analytical chemists have identified over 800 volatile compounds in roasted coffee. The question is which of these are most important to creating a good coffee flavor. In terms of development, consumers want convenience and quality. Flavors tend to be unstable so there is a constant challenge to find ways to protect flavors as they go through heating, cooling, packaging and storage. Finally, there is always the search for that new or unique flavor that will be the next big blockbuster flavor--the next blue raspberry. An overview of flavor chemistry and current areas of research will be presented.

**Star Gaze with the Educators**

The Chemical Educators' Discussion Group will hold their February meeting at the Cincinnati Observatory. We will gather on February 11<sup>th</sup> at 6:30 PM for light refreshments and then enjoy programming from 7 to 8:30 PM. Frank Huss will guide us through a wonderful evening of telescope viewing--skies permitting - and Cosmo Chemistry. This will be a joint meeting with the physics teacher group (AAPT). You are encouraged to invite colleagues who teach astronomy at your school or in your district. You may also bring your own school-age children to this gathering. Visit the observatory's website at [www.cincinnatiobservatory.org](http://www.cincinnatiobservatory.org) for directions and information about this historic and active scientific institution. Direct your questions and comments to the group chair, Linda Ford, at [Linda.ford@7hills.org](mailto:Linda.ford@7hills.org).



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Section On-line:**

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## Science Café 2008 Report: Our Drinking Water

From Susan Hershberger

The 2008 Science Café on Local and Global Drinking Water Issues sponsored by the Cincinnati Section, National ACS and The Center for Chemistry Education Miami University Middletown (Science Education Partnership Award from National Institutes of Health. National Center for Research Resources) was held October 22<sup>nd</sup> at the Hofbrau Haus, Newport Kentucky. The speakers were Jeff Vogt, Senior Chemist, Greater Cincinnati Water Works, and Keith Zook, Global Sustainability Fellow from Procter and Gamble.

While the group size was a cozy crowd of about 15, the benefits of discussing science and chemistry "in public" were apparent. One group seated at a nearby table couldn't help but overhear the conversation and see the power point presentations and were overheard to remark, "I didn't know that", and "that's interesting". Another group seated along side our group, contained a man just returned from medical missionary work in Jordan, he said, "a week ago I certainly could have used those", referring to the PUR water purification tablets demonstrated and described by Keith Zook. He left with a supply of PUR packets and important contact information.

The event had been advertized in CINTACS, the Cincinnati Enquirer, and posters throughout the Cincinnati area and was attended by a mixture of students, Cincinnati Section ACS members, water chemists and friends.

## Call for Nominations: Teacher of the Year Awards

Please nominate outstanding area educators for High School Chemistry Teacher of the Year, Middle School/Junior High School Science Teacher of the Year, or Elementary School Science Teacher of the Year. Nominations should include the teacher's CV and at least one letter of nomination (ideally from the school principal), indicating why the individual exemplifies excellence in Chemistry Education (for High School) or Science for Middle or Elementary School. Due by **February 13, 2009**.

Nomination materials should be sent to:

Jeff Seeley, Ph.D.

[seeley.ja@pg.com](mailto:seeley.ja@pg.com)

or

11511 Reed Hartman Hwy

Cincinnati, OH 45241

## Call for Nominations: Outstanding Service Award

Nominations will be accepted for the Cincinnati Section Outstanding Service Award until **March 15, 2009**. The nominee should have performed an extraordinary service to the Cincinnati Section. The nominator should be a member of the Section. A complete nomination consists of a letter written by the nominator detailing the reasons the nominee is deserving of the award, and at least one supporting letter by another member of the Section, may include nominee's CV.

Nomination materials should be sent to:

Jeff Seeley, Ph.D.

[seeley.ja@pg.com](mailto:seeley.ja@pg.com)

## SPONSORS FOR MONTHLY ACS CINCINNATI SEC- TION MEETINGS IN THE 2008- 2009 PROGRAM YEAR

Each of these individuals, universities, companies, and departments listed below have agreed to sponsor one monthly meeting with a donation of \$1000 in cash or IN KIND services or facilities to defray the costs of holding a meeting:

**September:**  
(no sponsor sought)

**October:**  
Chemistry Department  
University of Cincinnati

**November:**  
(no meeting)

**December:**  
Xavier University  
Chemistry Department

**January:**  
Givaudan Flavors  
(with additional contribution from Iota Sigma Pi)

**February:**  
Procter & Gamble Company

**March:**  
Advanced Testing Laboratory

**April:**  
Girindus America, Inc.

**May:**  
Dr. Milton Orchin

[There may be shifts in Sponsor/Date assignments.]

The Cincinnati Section and its members are extremely grateful to these individuals and companies and recognize that the quality of our programs is improved by this financial support.

Ted J. Logan, Chair  
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## This Month in Chemical History

Harold Goldwhite, California State University, Los Angeles  
[hgoldwh@calstatela.edu](mailto:hgoldwh@calstatela.edu)

To quote verbatim from an earlier essay: “The idea of critically reviewing substantial areas of chemistry and producing a periodic report of progress originated with the great Swedish chemist of the early nineteenth century, Jons Jacob Berzelius (1779-1848). The original series of Jahresberichte, Berzelius' brain child and the first of the Annual Reports, did not survive its originator. But there are other long-lived series of such reports”.

This essay will focus on Volume VI of the Annual Reports on the Progress of Chemistry issued by the Chemical Society (of London) which has now metamorphosed into the Royal Society of Chemistry. This ambitious attempt to encapsulate the total of the significant work in chemistry for a whole year covers 1909 in a mere 270 pages.

It was, relatively, a peaceful year in world history; 5 years before World War I. Tensions were building in Europe but had not yet reached a boiling point.

Reviewing general and physical chemistry T. M. Lowry, of Bronsted-Lowry fame, looks first at pressure effects on physical and chemical properties. R. Threlfall has found no conversion of graphite to diamond at pressures up to 10,000 atmospheres and “temperatures up to the melting point of magnesia” – about 3100K. A new form of ice (shades of Vonnegut?), Ice III, has been observed at 3000kg/square cm. P.W. Bridgman, the high-pressure guru, has described two new high-pressure gauges based on a direct measurement of gas volume and on the resistance of a mercury column. New precision has been achieved in measuring osmotic pressure, including investigations by the Earl of Berkeley and his colleagues; so much for the stereotype of the indolent nobility. Detailed studies of the thermal dissociation of calcium carbonate by Le Chatelier show marked deviations among different experimental studies, perhaps attributable to different levels of adsorption of carbon dioxide by differently sized particles. E.C. Franklin has been studying conductivities of electrolyte solutions in liquid ammonia; he had done many pioneering studies of this remarkable solvent. Ostwald's dilution law relating concentration and degree of ionization, has been investigated for a wide range of carboxylic acids.

In reviewing inorganic chemistry H. B. Baker (whose work on intensive drying I wrote on some years ago in the Journal of Chemical Education) writes: “it is difficult to give a general idea of a year's work” – presumably in the 22 pages or so allocated to him. He makes some interesting remarks which could well apply to work done a century later!

“ In an ideal chemical world, nothing would be published until a complete account of the subject of research could be presented. But apart from the general question of publishing carefully worked out installments of a large research, the scramble for priority, happily not common in this country[!], is often responsible for the appearance of immature work.”

*(Continued on next page)*

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Sir William Ramsay has been unable to detect helium in the radioactive breakdown of thorium. There has been much discussion of Prout's hypothesis, that all atomic masses should be integral on the scale of  $H = 1$ , but since 1909 was before the fuller understanding of isotopes the arguments descended into numerology rather than verifiable science. Meanwhile new determinations of atomic weights have improved values for, among others, chlorine, nitrogen, and carbon.

Silane and disilane have been obtained as pure compounds, and various chlorosilanes probably containing chains of four and six silicon atoms have been characterized. Raschig has isolated chloramine for the first time, and the dangerous nitrogen trichloride has also been prepared in pure form. A new electrolytic ozonizer produces as much as 23% of ozone in oxygen. The disputed existence of sulfur dichloride has now been confirmed.

In the next essay I look at other areas of chemistry from the perspective of 1909.

### **Make Plans NOW to Attend the 2009 ACS National Meetings !**

Visit [www.acs.org](http://www.acs.org) for additional information for the 2009 meetings. Check future editions of Cut and Paste for updated information on future meetings or contact [division@acs.org](mailto:division@acs.org) for more information about programming at the meetings.

#### **237<sup>th</sup> ACS National Meeting—Salt Lake City—March 22-26, 2009**

Theme: *Nanoscience: Challenges for the Future*

#### **238<sup>th</sup> ACS National Meeting—Washington, DC—August 16-20, 2009**

Theme: *Chemistry and Global Security: Challenges and Opportunities*

#### **239<sup>th</sup> ACS National Meeting—San Francisco—March 21-25, 2010**

Theme: *Green Chemistry for a Sustainable World*

#### **240<sup>th</sup> ACS National Meeting—Boston—August 22-26, 2010**

Theme: *Chemistry for Preventing and Fighting Disease*





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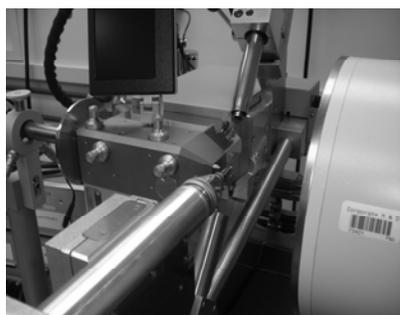
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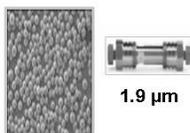
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