



NEWSLETTER

Oklahoma Section American Chemical Society

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Chemical Analysis of Fire Debris in Suspected Arson Cases: Triumphs and Pitfalls

Thursday – February 24, 2005
University Center - The Heritage Room
University of Central Oklahoma
Edmond OK

Dr. Wolfgang Bertsch

Professor of Chemistry
Chemistry Department
The University of Alabama
Tuscaloosa AL 35487-0336

Arson is a multibillion business. Forensic chemists attempt to determine whether traces of accelerants such as gasoline are present in fire debris. At first sight, it would appear that volatile fuels would “go up in smoke” and the evidence may thus disappear. This is a possibility, but in the majority of all cases, remnants of fuel type volatiles are left behind. Those are the target of the analyst. The chemical analysis of fire debris is one of the most challenging tasks one can think of. The forensic chemist needs to isolate volatiles from the debris and distinguish the compounds derived from accelerants from those generated by pyrolysis. There are many problems with the analytical methodology currently available to the forensic chemist. The presentation will focus on the weak links of the overall procedure and present data from round robin tests. “False positives” [finding an accelerant when none is present] is the worse possible scenario. Unfortunately, errors of this type do sometimes occur even when sophisticated instruments are used. Several examples will be presented.

[Reservation Information on Page 2]

Schedule:

**6:00 PM Social Hour: Howell Hall Atrium-directly W of Nigh University Center
where the meal & talk will be held.**

Nigh University Center: the large brick building directly in front of you as you head N on Garland Godfrey Drive, the MAIN UCO entrance. Use 2nd Street [W from I-35 or E from Broadway] to get to Garland Godfrey Drive. There's I-35 work near Guthrie; you may wish to leave earlier than normal.

7:00 PM Dinner: Heritage Room – UCO University Center.

8:00 PM Speaker: Dr. Wolfgang Berstch.

Menu: Dinner: [a] Seasonal fruit salad or fresh spinach salad; [2] BBQ Beef Brisket or farmers chicken breast (mushrooms, scallions, bacon, Parmesan); [3] parsley red potatoes and green beans almandine; [4] fresh fruit parfait, French silk pie, banana cream pie, apple pie or Black Forrest cake; tea, coffee.

Cost: \$17.00-ACS Member; \$10.00-ACS Student Affiliate.


Deadline: Monday, 21 February, 2005; 4:30 p.m. Pat Sherman: 405.974.5018
psherman@ucok.edu

Dr. Wolfgang Bertsch

Professional Activities:

Diplomat, Board Certified Forensic Examiner, American Board of Forensic Examiners. Member: American Chemical Society; International Association of Arson Investigators; Editor: Journal of High Resolution Chromatography, Huthig Publishers, Heidelberg, Germany. President: Investichem Laboratories, Inc., Tuscaloosa, Alabama, a Laboratory specializing in fire debris analysis by gas chromatography/mass spectrometry [GC/MS]. Member: International Association of Arson Investigators. Research interests include general chromatography with emphasis on capillary column technology, GC/MS instrumentation and applications; forensic analysis; optimization, trace analysis; food and flavor analysis; sampling methodology for volatiles in foods, wine and citrus essential oils; organoleptic evaluation; pyrolysis-GC; application to bacterial classifications, synthetic polymers, forensic analysis, insect taxonomy, and related areas, environmental analysis; sampling methodology for trace volatiles in air and water [except pesticides]; analysis of industrial effluents; natural product chemistry; and analysis of essential oils, plant materials, and materials of biological interest.

Publications:

100+ refereed publications, one book, three book chapters, editor of five books. 

2005 Oklahoma Section Chair

Valerie Ferguson

- Valerie is currently a Chemistry Teacher and Head of the Science Department at Moore High School. She teaches Chemistry and Advanced Placement Chemistry. She received her B.S. in Science Education from the University of Central Oklahoma in 1985 and has been teaching in the Moore Public School system since 1986. She serves as a consultant for the College Board, a reader for the Advanced Placement Exam, on the Board of the Oklahoma Science Teachers Association, on the Executive Board for the Chemistry Educators of Oklahoma, and as the Coordinator for NCW for the Oklahoma Section, ACS. Valerie was the co-

organizer for the symposium on Advanced Placement Chemistry at the 14th BCCE in Clemson, SC. Valerie has also been involved for many years with the Section's National Chemistry Week activities. It is largely through Valerie's dedication and hard work in the initial years that the Section's National Chemistry Week has become one of the Section's outstanding yearly activities. It then evolved into The Omniplex format of the past years. Valerie served as the Section Chair some four years ago.

2004 Oklahoma Section Election:

Dr. Charles V. Rice – is the Section Chair-Elect. Charles will serve as Section Chair for the calendar year 2006. Dr. Rice is an Assistant Professor in the Department of Chemistry and Biochemistry at the University of Oklahoma.

Dr. Kennet H. Brown – was re-elected the Section Treasurer Ken will serve as Section Secretary for the calendar years 2005 and 2006. Ken retired at the end of Spring 2004 semester, ending a 31 year teaching career at the Northwestern Chemistry Department. Ken continues to reside in Alva.

Dr. Cheryl B. Frech – was re-elected as the Section Councilor. Cheryl is in the Department of Chemistry at the University of Central Oklahoma and is also the current department chair. Cheryl will serve as Section Councilor for the calendar years 2005, 2006 and 2007. Cheryl also does the Section PR work.

New Student Awards

The Oklahoma Section recently created two new awards for undergraduate students. The **Terrill Smith Travel Award** is designed for undergraduates to travel to a regional or national ACS meeting to present a paper or poster. Two awards of up to \$600 will be awarded each year, one for fall travel and one for spring travel. **This award is named in honor of Dr. Terrill [Terry] Smith**, longtime Oklahoma Section officer and councilor, who retired from UCO in 1999. Terry was a strong supporter of undergraduate research and student affiliates at UCO and in the section.

The **Roger Baldwin Graduate School Award** is designed for undergraduate students who have been accepted to attend graduate school in the chemical sciences. One award of \$500 will be presented each spring. **This award is named in honor of Dr. Roger Baldwin**, another longtime Oklahoma Section officer who is retired from Kerr McGee Corporation. The section is able to offer these new awards partially due to Roger's persistent fund-raising efforts associated with the Southwest Regional Meeting in 2003.

Applications for both awards are available from Section officers or on our website, <http://membership.acs.org/O/Oklahoma/Index.htm>. For **more information** about these awards, **contact Gordon Eggleton**, geggleton@sosu.edu.

Oklahoma Section Website:

Dr. James J. Dechter – is the Section webmaster. Jim graciously "consented" be the Section webmaster. Jim is Professor of Chemistry at the University of Central Oklahoma. Jim served as UCO Chemistry Department Chair from 2000-2004. Jim was also Section Chair in 2001.

If any Section member has any information to be posted on the website, contact Jim. His phone number is: 405.974.5435. His e-mail address is: jdechter@ucok.edu

The Oklahoma Section website address: <http://membership.acs.org/O/Oklahoma/Index.htm>.

Councilor Report Fall 2004

The 228th American Chemical Society meeting was held in August 2004 in Philadelphia, PA. The Council meeting was held on Wednesday, August 25. Listed below are some of the items that may be of interest to ACS members.

Candidate Statement Guidelines: Candidates for ACS President and Directors provide a written statement that is published with the ballots. The Board limited the length of these statements from 1000 words to 750 words. A number of councilors were distressed at this limitation, and asked that the original length be restored. However, after much heated debate, the resolution did not pass. Bottom line: You only get to read a 750-word statement from candidates.

Ethics Committee: A proposal to establish a new ACS Ethics Committee was referred back to the Committee on Committees.

Electronic Balloting: ACS is moving toward electronic balloting for national elections. Watch for future options. The national bylaws will be changed and local sections will also be able to use electronic balloting.

Teacher Memberships: This will allow experienced and qualified pre-college chemistry teachers to join ACS as full or associate members. It is hoped the number of pre-college participants and members will increase.

Multidisciplinarity of Chemistry: A lengthy discussion was held on how the ACS should adapt to chemistry in the present and future. Many people now work in jobs that require chemistry or as chemists, yet these people are not classified as chemists. This affects perception of chemistry, funding, and recruitment of students and faculty to the discipline.

Employment Guidelines: The 7th edition of the ACS Professional Employment Guidelines will be published soon.

Founded in 1876 and chartered by Congress, the American Chemical Society is a nonprofit scientific and educational organization dedicated to the advancement of chemistry in the public interest. The Oklahoma Section is one of 188 across the nation serving the Society's 152,000 members.

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Thanks To:

Dr. John Michael Ferguson Associate Professor of Chemistry at the University of Central Oklahoma is the immediate past-chair Oklahoma Section ACS. Mike's quiet and low key approach to Section duties belied his ability to get whatever job needed to be done at Executive Committee meetings or during other times. Mike's enthusiasm, dedication and words of encouragement served the Section well during his tenure. **Thank you Mike for a job well done** as 2004 Chair of the Oklahoma Section ACS. We appreciated your work and efforts in all you did!

2005 Pentasectional Meeting

OSU has volunteered to host the 2005 Oklahoma Pentasectional Meeting. Proposed dates for the Pentasectional Meeting are: April 2, 2005 or April 9, 2005. Dr. Barry Lavine of OSU has expressed interest in serving as meeting chair. More details will appear in future Newsletters as they become finalized.

Oklahoma Section 2005 Meeting Schedule

- March:** Thursday, March 31, 2005
Norman: Stephenson Research & Technology Center
Speaker: Dr. Ken Nicholas
- May:** Thursday May 12, 2005
Stillwater
Speaker: Tracy P. Hamilton-Zymurgy: The Art & Science of Making Beer
- September:** OBU at Shawnee [Annual Family Meeting]
Speaker: Probably James Marshall of UNT
Date: To Be Determined
- October:** Thursday October 13, 2005
Speaker: J. Ernest Simpson-Chemistry of Wine
Location: TBA
- November:** Speaker: Chemist of the Year-Daniel Resasco
Location: Try for Ada
Date: To Be Determined

February 2005 Section Meeting

Thursday 24 February, 2005

The Heritage Room – University Center
University of Central Oklahoma

Speaker: Dr. Wolfgang Bertsch

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