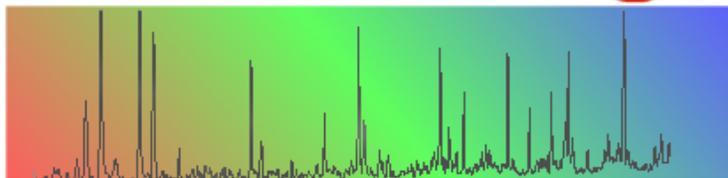




# SAS-Chicago



## January Meeting

Tuesday, January 15, 2008

The January 2008 meeting will be held at the Auditorium of McCrone Associates, 850 Pasquinelli Drive, Westmont, IL. See the map on the following page.

Social Hour: 5:30 PM

Buffet Dinner: 6:00 PM

Speaker: 7:00 PM

### DART Mass Spectrometry for Ink Analysis

by

**Roger Jones, Ph.D.**

*Iowa State University*

Crimes using guns or bombs may draw more attention, but crimes using documents are more prevalent. The examination of questioned documents is central to investigating these crimes, and analysis of the ink on documents is often pivotal to this examination. DART (direct analysis in real time) is an ion source for mass spectrometry (MS) that allows the analysis of solids in the open air without sample preparation. It does this using a heated stream of helium containing electronically excited atoms. The stream evaporates and ablates material from the solid surface and ionizes the vapor. This is a relatively mild sampling and ionization process, so when DART MS is applied to writing inks on paper, the spectra consist primarily of protonated and ionized molecules from the more labile components of the ink, with little molecular fragmentation. So little dye is removed during the analysis that the visual appearance of the document is unchanged, preserving the forensic evidence. Other forensic analysis techniques for inks are dominated by the ink dyes, but DART MS is not, so it is complementary to the others. We are examining the various issues related to whether DART MS is a practical method for the forensic identification of ink on paper. These include how the paper on which the ink is written affects the ink spectrum, how the age of the writing affects the spectrum, and whether the spectra of inks are sufficiently characteristic to allow them to be identified from their spectra. We are building up a library of DART ink spectra to test how readily inks can be identified. Other potential forensic applications of DART MS will be briefly discussed.

Please make your dinner reservations for the upcoming meeting by email at [sas.chicago@bigfoot.com](mailto:sas.chicago@bigfoot.com), by using the form on our web page < <http://www.sas-chicago.org/Online%20Registration%20at%20McCrone%20Associates.htm> > or by calling Slav Stepanovich at 847-421-2056. Leave **your name, company affiliation, a telephone number** and the **number of reservations**. Please call by **noon Friday, January 11th**, so that proper arrangements. If you can't attend, cancel by Monday noon. Our appreciation to The McCrone Group for the use of their facility.

#### **Pizza Buffet includes:**

- selection of pizza
- soft drinks, tea and coffee
- selection of baked goods for dessert



Dinner Cost Members: \$25

Students and Unemployed Members: \$10

Non-members: \$30

## Biography of Roger Jones

Roger Jones has been an associate chemist at Iowa State University in both Ames Laboratory–USDOE and the Institute for Physical Research and Technology since 1988. He received his B.S. in chemistry from the University of California at Berkeley in 1975 and his Ph.D. in physical chemistry from the Massachusetts Institute of Technology in 1980. His primary research has been in applications of infrared spectroscopy and mass spectrometry to a wide variety of real-world problems. In addition to forensic ink analysis, recent problems have included detecting and measuring weathering and acute chemical damage in carbon-fiber composites, rapid sorting of seed grain for desirable compositions, analysis of pyrolysis oil, depth profiling of layered polymers and coatings, and real-time on-line process analysis.

## Index of Newsletter Sponsors

(Click on card or URL to link to Sponsor's web site)

**Renishaw Inc**  
5277 Trillium Blvd.  
Hoffman Estates, IL 60192  
Tel (847) 286-9953 Fax (847) 286-9974  
[www.renishaw.com](http://www.renishaw.com)

**RENISHAW**  
apply innovation

**Tim Prusnick**  
Midwest Sales Manager - Spectroscopy Products Division  
Email [timothy.prusnick@renishaw.com](mailto:timothy.prusnick@renishaw.com)



[www.renishaw.com/spectroscopy](http://www.renishaw.com/spectroscopy)

[email](mailto:timothy.prusnick@renishaw.com)

**JERRY SHKOLNIK**  
Executive Sales Representative  
Chicago, IL

**TELEDYNE INSTRUMENTS**  
**Leeman Labs**  
A Teledyne Technologies Company

6 Wentworth Drive  
Hudson, New Hampshire 03051  
Phone: 847.478.0452 Fax: 847.478.0467  
Toll Free: 1.800.634.9942 Cell: 603.493.6176  
E-Mail: [JShkolnik@Teledyne.com](mailto:JShkolnik@Teledyne.com)  
[www.LeemanLabs.com](http://www.LeemanLabs.com)

[www.leemanlabs.com](http://www.leemanlabs.com)

[email](mailto:JShkolnik@Teledyne.com)

**PerkinElmer**  
precisely.

† **Jeff Kukuk**  
Senior Sales Engineer  
Inorganic Analysis

† PerkinElmer, Inc.  
2000 York Road, Suite 132  
Oak Brook, IL 60523  
Phone: 800 762-4000 ext. 132  
Fax: 630 556-4523  
Cell: 630 222-8921  
[jeff.kukuk@perkinelmer.com](mailto:jeff.kukuk@perkinelmer.com)  
[www.perkinelmer.com](http://www.perkinelmer.com)

[www.perkinelmer.com](http://www.perkinelmer.com)

[email](mailto:jeff.kukuk@perkinelmer.com)

Chip McCauslin  
Sales Representative-Atomic Spectroscopy  
Analytical Chemist  
Chicago Area  
Optical Spectroscopy Instruments

**VARIAN**

Varian Analytical Instruments  
2700 Mitchell Drive  
Walnut Creek, CA 94598  
Phone: 800.926.3000 Ext. 3025  
Fax: 925.945.2360  
<http://www.varianinc.com>  
[chip.mccauslin@varianinc.com](mailto:chip.mccauslin@varianinc.com)

[www.varianinc.com](http://www.varianinc.com)

[email](mailto:chip.mccauslin@varianinc.com)

**Meinhard Glass Products**

For the best in nebulizers, sample introduction components, torches, and spray chambers, call:  
**1-800-MEINHARD**

**Geoff Coleman, Ph.D., Vice President**

700 Corporate Circle, Suite A  
Golden, Colorado 80401-5636 USA  
Tel: 303.277.9776 Fax: 303.216.2649  
[gcoleman@meinhard.com](mailto:gcoleman@meinhard.com) [www.meinhard.com](http://www.meinhard.com)

[www.meinhard.com](http://www.meinhard.com)

[email](mailto:gcoleman@meinhard.com)

**PerkinElmer**  
precisely.

† **Steve Bouffard, Ph.D.**  
Technical Sales Specialist  
FTIR, UV/Vis/NIR, GC, GC/MS  
HPLC, DSC, TGA, TMA and DMA

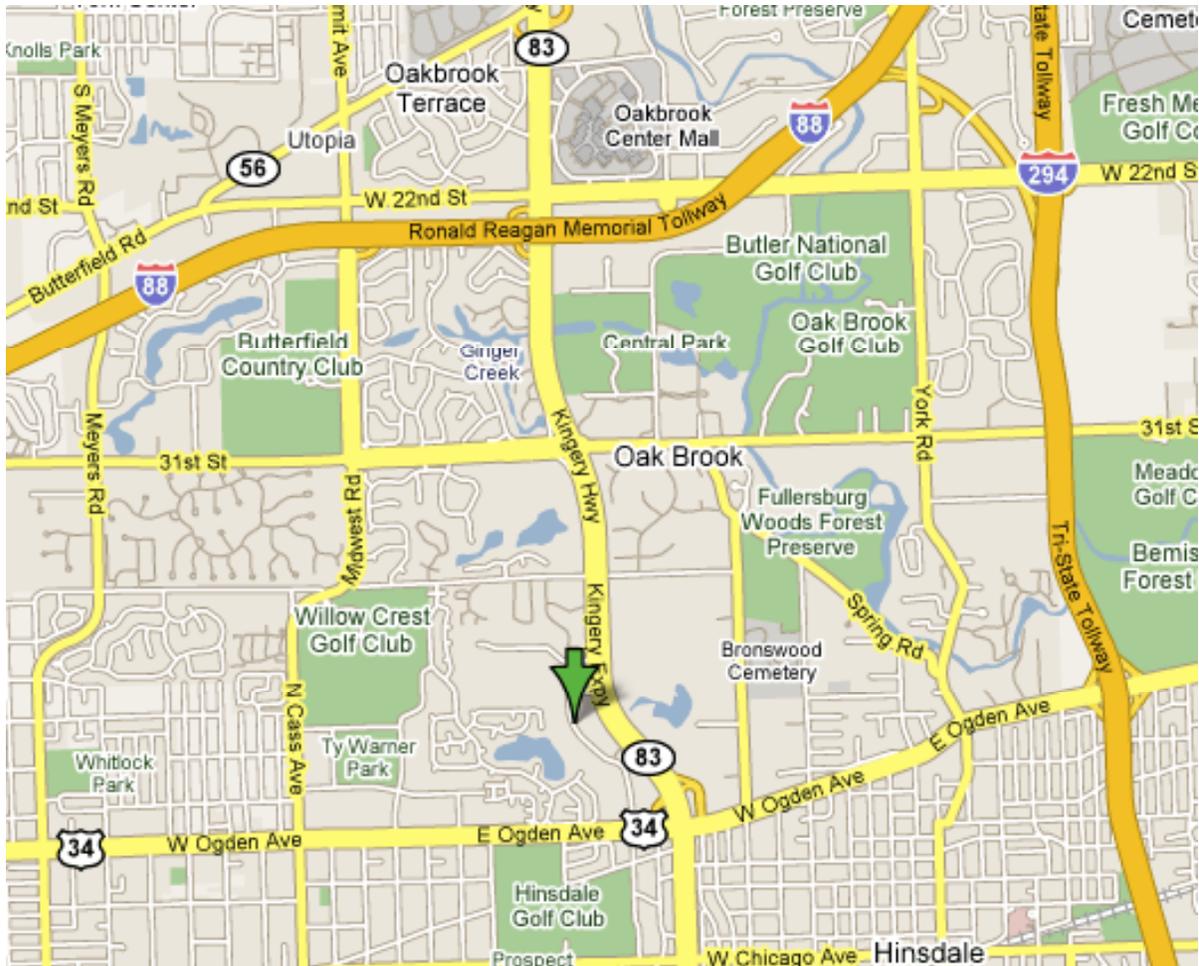
† **PerkinElmer Life and Analytical Science**  
2000 York Road, Suite 132  
Oak Brook, IL 60523  
Phone: (800) 762-4000  
Fax: (203) 944-4914  
[Steven.Bouffard@perkinelmer.com](mailto:Steven.Bouffard@perkinelmer.com)  
[www.perkinelmer.com](http://www.perkinelmer.com)

[www.perkinelmer.com](http://www.perkinelmer.com)

[email](mailto:Steven.Bouffard@perkinelmer.com)

## DIRECTIONS TO THE MCCRONE ASSOCIATES - 850 Pasquinelli Drive, Westmont, IL

From I-294, exit onto Ogden Avenue west (Rte. 34). Drive 2 miles west, and immediately after Rte. 83, at the second set of lights, turn right onto Pasquinelli Drive. McCrone Associates is on the left hand side 0.6 miles north of Ogden Avenue,



---

## Index of Newsletter Sponsors

(Click on card or URL to link to Sponsor's web site)

**Thermo**  
ELECTRON CORPORATION

**Andrew M. Haefner, Ph.D.**  
Sales Engineer  
Molecular Spectroscopy

Nicolet FT-IR, Raman  
FT-NIR, and Microscopy

andrew.haefner@thermo.com

5225 Verona Road  
Madison, WI  
53711-4495

(800) 648-5456  
(815) 479-0127 fax  
(815) 479 0887 direct

www.thermo.com

[www.thermo.com](http://www.thermo.com)

[email](mailto:andrew.haefner@thermo.com)

**BioTools**  
*'Tools for Discoveries of Life'*

**Rina K. Dukor, Ph.D.**  
President / CEO

Bio Tools, Inc.  
950 N. Rand Rd. Unit 123  
Wauconda, IL 60084 USA

Tel: (847) 487-5500  
Fax: (847) 487-5544  
Toll Free: (866) BTOOLS1  
E-mail: rkdukor@btools.com  
Website: www.btools.com

[www.btools.com](http://www.btools.com)

[email](mailto:rkdukor@btools.com)