

**Minnesota Chromatography Forum  
31st Annual Spring Symposium  
May 11-13 , 2010  
Earle Brown Heritage Center  
Minneapolis, MN**

**Abstract submission deadline for a technical presentation: April 30, 2010**

**Course registration deadline: April 30, 2010**

**Symposium Advanced Registration deadline: April 30, 2010**

For further information contact Janice Jopke  
by phone at (952) 934-5082 or email at [ccsevents@comcast.net](mailto:ccsevents@comcast.net)  
Or, visit the MCF Website at [www.minnchrom.org](http://www.minnchrom.org)

Minnesota Chromatography Forum  
PO Box 44562  
Eden Prairie, MN 55344

The Minnesota Chromatography Forum invites you to participate in its 31<sup>st</sup> Annual Spring Symposium and Short Courses at the Earle Brown Heritage Center in Minneapolis, MN. This year's program will interest people from all areas of separation science.

— KEYNOTE ADDRESS —

**What Do Explosives Smell Like?  
Characterizing the Volatile Compounds  
Available to Explosive-Detecting Canines  
Using Gas and Liquid Chromatography**

By

**Professor John Goodpaster  
Department of Chemistry and Chemical Biology  
Forensic and Investigative Sciences Program  
Indiana University - Purdue University Indianapolis**

— FOCUS SESSIONS —

— GENERAL SESSIONS —

— POSTER SESSIONS —

— SPECIAL TOPIC SESSIONS —

— INTENSIVE SHORT COURSES —

**"Troubleshooting HPLC Systems"**  
by Tom Jupille

**"Installation, Care and Maintenance of GC Systems"**  
by Daron Decker

**"Chemometrics in Chromatography"**  
by Brian Rohrback and Scott Ramos

**THE UPPER MIDWEST'S LARGEST  
CHROMATOGRAPHIC  
INSTRUMENTATION AND SUPPLIES  
EXHIBITION**

On Wednesday afternoon, May 12, you are invited to the Special Topic Sessions, Vendor Seminars and a concurrent Exhibition of chromatography supplies and instrumentation. Other highlights of Wednesday afternoon are the complimentary Reception in the Exhibit Hall, and the poster session. The Reception, Vendor Seminars, Special Topic Sessions, Equipment Exhibition and Poster Session are free of charge and provide an excellent opportunity to network with fellow chromatographers.

## DAILY PROGRAM

### Tuesday, May 11, 2010

8:00am- 4:30pm **Concurrent Short Courses**  
"Troubleshooting HPLC Systems"  
"Installation, Care and Maintenance of GC Systems"  
"Chemometrics in Chromatography"

### Wednesday, May 12, 2010

8:00am - 12:00pm **Concurrent Short Courses**  
(continued from Tuesday)  
12:00pm - 7:00pm **Equipment Exhibition open**  
1:00pm - 3:00pm **Special Topic Sessions**  
3:00pm - 6:00pm **Vendor Seminars**  
4:00pm - 7:00pm **Reception** in the Exhibit Area  
1:00pm - 7:00pm **Posters** to be displayed  
4:00pm - 5:00pm **Authors** asked to be with their posters

Registration is *not* required for the Vendor Seminars, Special Topic Sessions, Equipment Exhibition, Reception and Poster Session on Wednesday.

Registration is required to attend Thursday's sessions.

### Thursday, May 13, 2010 (Registration required)

7:30am - 3:00pm Registration  
10:00am - 4:00pm Vendor Exhibits  
10:00am - 3:40pm Posters\*  
8:30am - 10:00am **Opening Session**  
8:30am Welcome  
8:45am Announcements  
9:00am Keynote Address  
10:00am Refreshments  
10:30am - 12:00pm **Morning Session**  
12:00pm Lunch  
1:20pm - 3:00pm **Early Afternoon Session**  
3:00pm - 3:40pm Refreshments and Prize Drawings in the Exhibit Area  
3:40pm - 5:00pm **Late Afternoon Session**  
5:00pm Annual Business Meeting  
\*3:00pm - 3:40pm Authors asked to be at posters

**— SHORT COURSES —****Tuesday & Wednesday, May 11 & 12**

The Minnesota Chromatography Forum Education Committee presents three short courses in conjunction with the 2010 Spring Symposium. These courses will be conducted all day May 11<sup>th</sup> and the morning of May 12<sup>th</sup> at the Earle Brown Heritage Center. **The registration deadline is April 30, 2010.** Course fees are \$430 and include luncheons, refreshments, and course materials. The student course fee is \$100 (undergraduate), and \$200 (graduate). A current fee statement from your school is required for the student discount.

**— SPECIAL TOPIC SESSIONS —****Wednesday Afternoon, May 12**

Special Topic Sessions will be held on Tuesday afternoon. The sessions will address practical laboratory topics in HPLC and GC. The intent is to provide topics of general interest and current utility to local chromatographers by leaders in each Special Topic area.

The sessions will be 45 minutes in length, and focus on practical topics. After a brief introduction to a topic, the moderators will open the discussion for comments and questions. Participants are encouraged to bring questions and problems from their areas of interest to the sessions.

1:00pm HPLC

2:00pm GC

**Refer to the MCF Web Page**

**For Updated Symposium Info**

**[www.minnchrom.org](http://www.minnchrom.org)**

**— COURSE OUTLINES —****“Installation, Care and Maintenance of GC Systems”**

**by Daron Decker**

This day-and-a-half course will focus on just how gas chromatography works and what is really going on inside the capillary. The information will be presented in a very straight-forward way and reinforced with basic chromatographic theory so that the novice as well as the experienced chromatographer can benefit from the discussion. Installing and conditioning the column, and then making a successful injection, are key to successfully starting the chromatographic process and the subsequent analysis. This will be discussed in lecture and reinforced with the hands-on experience with the various manufacturers present, citing the similarities and differences one can expect from instrument to instrument.

Since keeping the GC system up and running is the goal, preventive maintenance is the key. Things that damage the column and ways to prevent problems before they occur will be explored. The four major reasons why columns die will be presented, as well as how to avoid those problems so that the column, theoretically, will last forever. After care and maintenance is explored the discussion will shift to troubleshooting. Knowing how to diagnose problems and correct them is not generally taught before the analyst ever gets in front of the instrument. Therefore, experience, trial-and-error, and dumb luck often lead to remedies that have a lot of "voo-doo" attached to them. Knowing what can truly go wrong with a capillary and how to fix it will be tackled.

**Course Outline****Day One - Lecture**

- ◆ GC Introduction and Theory
- ◆ Column Installation and Conditioning
- ◆ Choosing Carrier Gas and Flow Rates
- ◆ Injection
- ◆ Care and Maintenance of GC Columns
- ◆ Troubleshooting of GC Systems

**Day Two – Laboratory Exercises**

- ◆ LAB 1 - Cutting the Column, Setting the Distances, Leak-free Seal
- ◆ LAB 2 - Setting/Verifying Flows (different instruments)
- ◆ LAB 3 - Typical Inlet Maintenance (different instruments)
- ◆ LAB 4 - "What's wrong with this picture?"

**“Chemometrics in Chromatography”****by Brian Rohrback**

You've set up your chromatograph, found the best methods and removed the gremlins. Now you're collecting data, lots of data, and need to characterize what you've got. You can use traditional tools to look at individual peaks, areas, heights, retention times, etc. Or, you can approach interpretation in a holistic way—Chemometrics.

This course is aimed at accomplishing two goals. The first is to demystify the field of chemometrics and the second is to show how the technology is applied both in signal processing and for pattern recognition. The science is used to significantly reduce retention time variability, which ultimately leads to simplified methods development, instrument calibration and database management. Chemometrics also allows the interpretation of a chromatographic pattern to be automated, leading to more complex quality monitoring exercises to be brought on-line or near-line.

Fundamentals of chemometrics will be introduced, with minimal dependence on mathematics. Several methods of multivariate analysis will be described, including PCA, SIMCA, and KNN. Plus, new tools in chromatographic alignment will be demonstrated. Chemometric analysis can succeed with only peak heights or areas, but processing of whole chromatograms opens new doors of opportunity for better understanding of the nature of your samples

**“Troubleshooting HPLC Systems”****by Tom Jupille**

This popular 1-1/2 day course returns to MCF to help build the HPLC troubleshooting skills of the participants. The course reviews all aspects of HPLC equipment operation and maintenance. Time is spent to help improve the understanding of the separation process and many practical examples are used to help attendees develop skills to identify and correct problems with chromatographic separations. Students get to practice their skills with a set of case studies done in small groups. Each participant will receive a workbook containing all the slides and notes presented in the course. Ample time is available for discussion of specific problems that users bring to the class. Students with a working knowledge of HPLC with some hands-on experience will benefit most from this course.

Please note: This course does not have a lab this year.

**Refer to the MCF Web Page****For Updated Symposium Info****[www.minnchrom.org](http://www.minnchrom.org)****BIOGRAPHICAL SKETCHES OF COURSE INSTRUCTORS**

**Daron Decker** works for Agilent Technologies as a technical specialist within the Consumable and Accessories organization. Prior to joining Agilent he performed the same role with Chromatography Inc. a contractor of technical support for Agilent GC and HPLC columns and supplies. He spent ten years working for J&W Scientific, Inc. also in the area of technical support. Daron has given hundreds of seminars, courses and technical papers on GC (both domestic and international). He started his career at an environmental lab in south central Minnesota (MVTL) and worked there for two and half years as an analytical chemist. He received his BS in Chemistry (ACS Degree) from the University of South Dakota in 1987. Daron has been a long time proponent of the MCF and member since 1987. He currently lives in Pearland, TX (south of Houston) with his wife of 23 years and their 4 children. Daron was the 2003 recipient of the MCF Palmer Award.

**Tom Jupille** has been a practicing chromatographer for more than 30 years, during which he has written more than 30 papers on chromatography and related subjects. He received his BS and MS degrees from the Illinois Institute of Technology, and also holds an MBA degree from the University of California – Berkeley. He worked primarily in gas chromatography in the late '60s, switching to thin-layer chromatography in the early '70s and then to HPLC and ion chromatography in late '70s. His career has focused on instrument and column development and user support, providing a broad foundation of practical experience to call on as an instructor. Over the past 19 years, Tom has presented courses and seminars in the field of chromatography to more than 3000 students. In addition to teaching, he has been involved in the development and support of computer modeling techniques for chromatography method development. He is President of LC Resources and a Consulting Editor for LCGC magazine. He is probably best known as the moderator of the popular Chromatography Forum on-line chromatography discussion group.

**Dr. Brian Rohrback** is the President and CEO of Infometrix and has managed the company since 1985. In these 25+ years, Infometrix has moved into the position as the dominant independent supplier of chemometrics technology to analytical instrument companies. As such, the company products have been integrated into product offerings by Agilent Technologies, Beckman, Bio-Rad, and Waters Corporation, among others. In the oil industry, Rohrback held positions as a research scientist managing the chromatography group, an exploration scientist, and the Manager of Planning and Budget for Europe-Africa. Rohrback holds a B.S. (Harvey Mudd College) and a Ph.D. (UCLA) in chemistry and an MBA (University of Washington). Dr. Rohrback chairs the Chemometrics for On-line Process Analytics (COPA) initiative which meshes the process user community with software and instrument suppliers. He is also the industry liaison for the Process GC Initiative at the Center for Process Analytical Chemistry (CPAC). His publications span 30 years and cover topics in geochemistry, petroleum exploration and chemometrics. He was presented with the Paper of the Year award in geochemistry for an article in Nature.

**Dr. Scott Ramos** is the Chief Scientist at Infometrix and has been with the company for more than 25 years. He has been the main architect for most Infometrix products and maintains active collaborations with other chemometricians as well as with scientists in other fields who now apply chemometrics to their work. He is an analytical chemist with experience in environmental and trace hydrocarbons as well as with natural products. He has a B.S. in chemistry from MIT, an M.S. degree in environmental science from Washington State University and a Ph.D. in analytical chemistry and chemometrics from the University of Washington. Dr. Ramos worked at NOAA's National Marine Fisheries Service, the State Pollution Control Agency in Rio de Janeiro, Brazil, the Federal Amazon Research Institute in Manaus, Brazil, and now at Infometrix, Inc. Publications include studies of contamination by polycyclic aromatic hydrocarbons, essential oil characterization, and chemometrics applied to problems in various fields

**Refer to the MCF Web Page**

**For Updated Symposium Info**

**[www.minnchrom.org](http://www.minnchrom.org)**

**— KEYNOTE ADDRESS —**

**What Do Explosives Smell Like?  
Characterizing the Volatile Compounds  
Available to Explosive-Detecting Canines  
Using Gas and Liquid Chromatography**

**BIOGRAPHICAL SKETCH**

**\*\*\* KEYNOTE SPEAKER \*\*\***

**Professor John Goodpaster  
Department of Chemistry and Chemical Biology  
Forensic and Investigative Sciences Program  
Indiana University - Purdue University Indianapolis**

Dr. John Goodpaster received his Ph.D. in Analytical Chemistry and M.S. in Criminal Justice from Michigan State University. Following post-doctoral studies at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD, he served as a Forensic Chemist with the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Laboratory in Ammendale, MD. Dr. Goodpaster is currently an Assistant Professor in the Forensic and Investigative Sciences (FIS) Program at Indiana University Purdue University Indianapolis (IUPUI). Dr. Goodpaster teaches in the graduate program in the areas of alcohol and drug analysis as well as trace evidence. Ongoing research in Dr. Goodpaster's laboratory includes designing new techniques for explosives analysis as well as instrumental and statistical association of trace evidence. Current collaborations include projects with the Indiana State Police related to explosives, fire debris and fiber evidence. Lastly, a federally-funded project on the chemical compounds sensed by explosive-detecting canines is underway.

**Refer to the MCF Web Page**

**For Updated Symposium Info**

**[www.minnchrom.org](http://www.minnchrom.org)**

**JOB BOARD**

Listings for "Positions Wanted" and "Positions Available" will be posted on the Job Board. Additional information and forms will be available at the Registration Desk.

**DIRECTIONS****Directions to the Earle Brown Heritage Center:****From the West:**

Take I-94 East and I-694 East to Shingle Creek Parkway exit, follow cloverleaf around, turn left onto Shingle Creek Parkway, left at stoplight (Summit Drive North), left again one block at Earle Brown Drive (first turn), follow around to the main entrance on your right.

**From the East:**

Take I-94 West and I-694 West to Shingle Creek Parkway exit, follow cloverleaf around, turn right onto Shingle Creek Parkway, left at second stoplight (Summit Drive North), left again one block at Earle Brown Drive, follow around to the main entrance on your right.

**From the South:**

Take I-494 West to Hwy. 100 North, exit at John Martin Drive, at top of exit, cross through intersection 57th Avenue North to John Martin Drive, turn left, continue to first stop sign, turn right onto Earle Brown Drive, continue through next stop sign, watch for main entrance on your left.

**From the North:**

Take I-35 South to I-694 West, then to Shingle Creek Parkway exit, follow cloverleaf around, turn right onto Shingle Creek Parkway, left at second stoplight (Summit Drive North), left again one block at Earle Brown Drive, follow around to the main entrance on your right.

**PARKING - FREE! FREE!! FREE!!!**

There is ample free parking at the Earle Brown Heritage Center!

**WHAT IS THE MCF?**

The Minnesota Chromatography Forum is a scientific society committed to the advancement of chromatography. Since its founding in 1978, the MCF has provided area chromatographers with the opportunity to expand their knowledge in the separation sciences in a variety of ways.

Each year three evening sessions (typically fall, winter, spring) are held with invited speakers ranging from local experts to leading international chromatographers. In addition to the evening meetings, a three day Spring Symposium and Exposition is held in the Minneapolis/St. Paul area.

**BE AN MCF VOLUNTEER**

All of these events are organized by volunteers from the MCF membership. The MCF needs your active participation to continue to offer a variety of interesting and informative programs. Members are encouraged to sign up for any of the following committees: Education, Membership, Newsletter, or Symposium (Program, Exhibits, Facilities & Publicity). A description of each committee and a sign-up sheet will be provided in the Spring Symposium program. Please become an active member of the Minnesota Chromatography Forum.

**INVITED SPEAKERS AND CONTRIBUTED PAPERS**

A list of invited speakers and contributed papers may be viewed at the MCF webpage

[www.minnchrom.org](http://www.minnchrom.org)

# **31<sup>st</sup> ANNUAL SPRING SYMPOSIUM**

## **CALL FOR PAPERS**

The Minnesota Chromatography Forum invites you to participate in its 31<sup>st</sup> Annual Spring Symposium and Short Courses at the Earl Brown Heritage Center in Minneapolis, MN. This year's program will interest people from all areas of separation science.

This Call for Papers solicits contributions for oral and poster presentations from all areas of separation science. This is an excellent opportunity to share your work with your peers. General interest topics are very popular sessions.

The work **must** be presented by a person who was directly involved in the research. Plan your presentation to be no longer than fifteen minutes followed by a 5-minute question and answer period.

### **ABSTRACT SUBMISSIONS VIA WEBSITE**

Complete information for Abstract submission is available on the MCF website

**[www.minnchrom.org](http://www.minnchrom.org)**

(select Symposium Info, then select Submit Abstract)

### **ABSTRACT SUBMISSIONS**

Complete the Abstract Information Fields and the Author Information Fields on the Abstract Submission webpage.

Abstracts may be submitted online, or sent by e-mail to Peter Johnson at [mcfabstracts@gmail.com](mailto:mcfabstracts@gmail.com)

All of the information which is requested on the Abstract Information Form must be included

**Symposium Registration Fee is waived for Students presenting oral papers.**

**Deadline** for abstract submission is **Friday, April 30, 2010**

## 2010 MCF SPRING SYMPOSIUM / COURSE / MEMBERSHIP REGISTRATION FORM

MCF MEMBERSHIP ONLY (1-YEAR) \$ 25.00 \$ \_\_\_\_\_

**SPRING SYMPOSIUM - Includes luncheon and complimentary 1-year MCF membership.**

Spring Symposium (.5 CEU)	(May 13)		
<b>Advanced Registration (Deadline: April 30<sup>th</sup>)</b>		\$ 125.00 adv-reg.	\$ _____
<b>On-site Registration</b>		\$ 150.00 on-site	\$ _____
Spring Symposium <b>with course</b>	(May 11-13)	\$ 70.00	\$ _____
Spring Symposium: Full Time students	(May13)	\$ 35.00	\$ _____
Spring Symposium: Students presenting oral papers	(May 13)	no charge	\$ _____

### SHORT COURSE REGISTRATION

Short courses include luncheon for 2 days and complimentary 1-year MCF membership.

Short course fees do not include Spring Symposium Registration (May 13) but short course participants may register for the Spring Symposium for only \$70! **Deadline for Course Registration is April 30, 2010.**

“Troubleshooting HPLC Systems”	(May 11-12)	\$ 430.00	\$ _____
“Installation, Care and Maintenance of GC Systems”	(May 11-12)	\$ 430.00	\$ _____
“Chemometrics in Chromatography”	(May 11-12)	\$ 430.00	\$ _____

Full-time Students: Graduate: \$ 200.00 Undergraduate: \$ 100.00 \$ \_\_\_\_\_

Students: Indicate Course name here: \_\_\_\_\_

**TOTAL ENCLOSED (Payable to the MN Chromatography Forum, Inc.)** \$ \_\_\_\_\_

**Purchase Order No./Credit Card No.** \_\_\_\_\_ Visa/ MC/other \_\_\_\_\_

**Name of card holder:** \_\_\_\_\_ Exp. Date \_\_\_\_\_

Attendee \_\_\_\_\_ Phone \_\_\_\_\_

Company \_\_\_\_\_ FAX \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Is this your home address? Y / N

e-mail address \_\_\_\_\_

(check box if applicable): Please do not share my email address.

**Need a vegetarian meal? Check here:** \_\_\_\_\_ (Advance order required)

**Mail Payment and MCF Registration to:**

**MN Chromatography Forum Symposium**  
**CCS Associates**  
**6611 Countryside Dr.**  
**Eden Prairie, MN 55346**  
 email: ccsevents@comcast.net  
 Phone: (952) 934-5082  
 FAX: (952) 934-6741

**Where to Stay:** The MCF has blocked a limited number of rooms for Spring Symposium participants at:

Embassy Suites, Brooklyn Center (763.228.9864) at \$99 / night

*This hotel is connected to Earle Brown Heritage Center*

**Make reservations as soon as possible, limited space is available.** Participants desiring accommodation should call the hotel directly to make reservations. Please be sure to mention that you are attending the Minnesota Chromatography Forum (or MCF) Spring Symposium.