

**Minnesota Chromatography Forum  
30th Annual Spring Symposium  
May 12-14 , 2009  
Earle Brown Heritage Center  
Minneapolis, MN**

**Abstract submission deadline for a technical presentation: May 1, 2009**  
**Course registration deadline: April 28, 2009**  
**Symposium Advanced Registration deadline: April 28, 2009**

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 30<sup>th</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** —

**Chromatography in the Courtroom:  
Proving Drug Abuse Cases in Sports**

By

**Dr. Larry Bowers  
Chief Science Officer  
United States Anti-Doping Agency**

— **FOCUS SESSIONS** —

— **GENERAL SESSIONS** —

— **POSTER SESSIONS** —

— **SPECIAL TOPIC SESSIONS** —

— **INTENSIVE SHORT COURSES** —

**"Troubleshooting HPLC Systems"**

by **John Dolan**

**"Advanced GC Troubleshooting"**

by **Daron Decker**

**"Mass Spectral Interpretation"**

by **Fred Feyerherm**

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

On Wednesday afternoon, May 13, 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 are an excellent opportunity to chat with fellow chromatographers.

**DAILY PROGRAM**

**Tuesday, May 12, 2009**

8:00am- 4:30pm **Concurrent Short Courses**  
"Troubleshooting HPLC Systems"  
"Advanced GC Troubleshooting"  
"Mass Spectral Interpretation"

**Wednesday, May 13, 2009**

8:00am - 12:00pm **Concurrent Short Courses**  
(continued from Tuesday)  
12:30pm - 6:00pm **Equipment Exhibition opens**  
1:00pm - 5:00pm **Vendor Seminars**  
2:00pm - 4:00pm **Special Topic Sessions**  
3:30pm - 5:30pm **Reception** in the Exhibit Area  
1:00pm - 5:00pm **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 14, 2009** (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 Palmer Award presentation  
8:55am Undergraduate Research Award  
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 12 & 13**

The Minnesota Chromatography Forum Education Committee presents three short courses in conjunction with the 2009 Spring Symposium. These courses will be conducted all day May 12<sup>th</sup> and the morning of May 13<sup>th</sup> at the Earle Brown Heritage Center. **The registration deadline is April 28, 2009.** 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 13**

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**

John Dolan and Dan Marchand

2:00pm **GC**

Daron Decker and Fred Feyerherm

**Refer to the MCF Web Page**

**For Updated Symposium Info**

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

## — COURSE OUTLINES —

**“Advanced GC Troubleshooting”**

**by Daron Decker**

This day-and-a-half advanced GC course will explore how to troubleshoot a GC problem like the experts. Each of the different symptoms and problem areas will be discussed in detail. The analyst will be taught how to meld GC theory, practical tools, and common sense to narrow down and solve even the most elusive and difficult problems. Attendees will get a chance to test their newly acquired knowledge by applying it to actual problems that have come from other analysts in the industry into the GC technical support group over the years. Participants will need to ask the right questions and suggest possible tests to be tried and discuss those results to determine the root causes. So if you have always wanted to be the technical expert for troubleshooting GC then you need to attend this day and a half course. If you can't make it, send your best analyst instead but be aware that they will return a valuable asset not only to your lab but to anyone's lab. This is not a course for the novice but anyone with a working understanding of GC and its operation, care and maintenance. The instructor brings over 20 years of practical GC troubleshooting experience and has a reputation of making difficult material easy to understand and even fun at times. Class size will be limited to maximize interaction with the instructor and involvement in the troubleshooting exercises.

**Course Outline**

- ◆ GC Theory Review
- ◆ Carrier Gas/Flow Considerations
- ◆ Injection Issues – Where it all begins.
- ◆ When is it the GC Column, what can you do?
- ◆ Detectors – Do you see what I see?
- ◆ Quantitation – When the numbers aren't right.
- ◆ Tools for Troubleshooting
- ◆ Real Problems from the Real World...and Answers!
- ◆ Conclusions, Discussion, Q&A

**Refer to the MCF Web Page**

**For Updated Symposium Info**

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

**“Troubleshooting HPLC Systems”****by John Dolan, Ph.D.**

This popular 1-1/2 day course returns to MCF to help build the HPLC troubleshooting skills of the participants. The first day is spent in the classroom, reviewing all aspects of HPLC equipment operation and maintenance. Time is spent to 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. 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. The morning of the second day is spent in a round robin workshop with several equipment vendors. Each vendor will present a troubleshooting tool or technique to a small group of students to help reinforce material covered in the classroom session.

**“Mass Spectral Interpretation”****by Fred Feyerherm**

## Course Outline:

- Review of instrumentation and basic principles
- Characteristics of a good mass spectrum
- Accurate Mass and its use in interpretation
- Relating chemical structure to the mass spectrum
- Fragmentation pathways
- Ionization & Hyphenated techniques

**BIOGRAPHICAL SKETCHES OF COURSE INSTRUCTORS**

**Dr. John Dolan** is a Principal Trainer and consultant for LC Resources, Inc.. John received his Ph.D. from the University of California at Davis in 1976 and has more than 30 years of HPLC experience. After finishing graduate school, he did postdoctoral work at Northeastern University and then joined Technicon Instruments Corporation, where he worked for three years developing clinical HPLC technology. He moved to IBM Instruments, where he was involved in design and support of LC, IR, and UV products. As a columnist for LC/GC magazine, he has written over 200 installments of the “LC Troubleshooting” monthly column since 1983. In 1984, John and Lloyd Snyder founded LC Resources, which offered support to the separations community via teaching, software, consulting, and laboratory services. In 2002, LC Resources sold its software products to Rheodyne, the laboratory to Bioanalytical Systems, and retained the training business. After acting as General Manager of the BASi Northwest Laboratory for three years, John now spends full time teaching and consulting. He has written more than 100 scientific papers on LC theory, instrumentation, and applications as well as a book on troubleshooting LC instruments and methods. John is the 2002 recipient of the MCF Palmer Award.

**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 19 years and their 4 children. Daron was the 2003 recipient of the MCF Palmer Award.

**Fred Feyerherm** works for Agilent Technologies as a GC-GC/MS Applications Engineer. Fred specializes in GC and GC/MS for pesticides, environmental, petrochemical and forensic applications and NIDA labs. Fred has developed methods for the Olympic committee, many branches of the federal government and numerous private consulting laboratories. Over the last fifteen years he has worked to bring high speed GC into many labs and multiple applications. More recently, Fred has developed rapid multidimensional GC/MS solutions for forensic laboratories. Fred has a BS in Chemistry from the University of Houston. Prior to joining HP (now Agilent) in 1981, Fred was an analytical chemist at Dow Chemical. Fred was also a chemistry dept staff member at the University of Houston, in charge of departmental instruments. Fred has a total of 38 years experience in gas chromatography, and 34 years experience in GC/MS.

## — KEYNOTE ADDRESS —

**Chromatography in the Courtroom:  
Proving Drug Abuse Cases in Sports****BIOGRAPHICAL SKETCH**

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

**Dr. Larry Bowers**  
**Chief Science Officer**  
**United States Anti-Doping Agency**

Larry Bowers received his Bachelor of Arts degree in Chemistry from Franklin and Marshall College, Lancaster, Pennsylvania in 1972. Dr. Bowers completed his graduate work at the University of Georgia in Athens, Georgia. His thesis work, under the direction of Professor Peter Carr, involved the preparation and application of immobilized enzymes to problems in bioanalysis. He was awarded a Ph.D. degree in Chemistry in 1975. Dr. Bowers then joined the Clinical Chemistry and Toxicology Division of the Department of Clinical Pathology at the University of Oregon Health Sciences Center in Portland, Oregon as a postdoctoral fellow.

Dr. Bowers is author of over 120 publications and a book on immobilized enzymes. As a result of this work, he received the 1990 AACC Award for Outstanding Contributions to Clinical Chemistry in a Selected Area of Research. He also received the MCF L.S. Palmer Award for outstanding contributions to chromatography in 1985. He received the annual Franklin & Marshall College Alumni Citation in 2007 for distinguished professional contributions. He has contributed chapters on chromatography and mass spectrometry to many of the major texts in clinical chemistry.

From 1977 through 1992, Professor Bowers served on the faculty in the Department of Laboratory Medicine and Pathology at the University of Minnesota and held an adjunct appointment in the Department of Chemistry. His research involved drug analysis methods including HPLC/MS and the pharmacology and pharmacokinetics of the immunosuppressant drugs cyclosporine and rapamycin. In 1992, he became Professor of Pathology and Laboratory Medicine at Indiana University Medical Center in Indianapolis. His primary responsibility was as Director of the Athletic Drug Testing and Toxicology Laboratory, one of two International Olympic Committee-accredited laboratories in the United States. He served as Deputy Director of the drug testing laboratory for the 1996 Olympic Games in Atlanta and 1999 Pan Am Games in Canada. He was also Professor of Chemistry at the Purdue University School of

Sciences at Indianapolis. He had an active research program in both research and clinical applications of gas chromatography/ mass spectrometry and high performance liquid chromatography/tandem mass spectrometry as well as steroid metabolism.

In September, 2000, Dr. Bowers joined the United States Anti-Doping Agency (USADA). He currently serves as Chief Science Officer. The USADA is responsible for testing and adjudication, education, and research on issues related to the abuse of performance-enhancing drugs in Olympic and Paralympic sport in the United States. As manager of the USADA research grant program, he has overseen the development of a number of new tests to detect doping. He began the USADA Annual Symposium on Anti-Doping Science in 2002, a meeting that has gained international acclaim in the anti-doping community. In his scientific capacity with USADA, he was intimately involved with unraveling of the BALCO steroid scandal, including serving as a technical consultant during the IRS raid on the laboratory. He served as an Independent Observer for the World Anti-Doping Agency (WADA) at the Sydney Olympic Games. Dr. Bowers served as Chairman of the WADA International Standard for Laboratories Working Group which drafted the International Standard for Laboratories. He continues to serve on the WADA Laboratory Accreditation Working Group and works on the sub-committee that oversees the External Quality Assurance System.

Dr. Bowers was certified in Toxicological Chemistry and in Clinical Chemistry by the American Board of Clinical Chemistry prior to joining USADA. He served as a member of a Minnesota Department of Health committee that drafted the guidelines for implementation of the Minnesota workplace drug testing laws. He served as a consultant to the US Food and Drug Administration Medical Devices panel and to the Substance Abuse and Mental Health Service Administration Workplace Testing working group. He has been active in many professional organizations, including the American Association for Clinical Chemistry, the Commission on Accreditation in Clinical Chemistry, the American Board of Clinical Chemistry, and the American Chemical Society. He was a founder and a past President of the Minnesota Chromatography Forum (MCF). He served as Chairman of the 1994 International Symposium on Column Liquid Chromatography (HPLC '94). He has served as Associate Editor for the journal *Clinical Chemistry* in the areas of Toxicology and Therapeutic Drug Monitoring and on the Editorial Board of *Therapeutic Drug Monitoring*. Professor Bowers has contributed to the rules and guidelines of the IOC-accredited laboratories as a member of the Laboratory Director's Working Group.

## 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 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.

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)

# **30th ANNUAL SPRING SYMPOSIUM**

## **CALL FOR PAPERS**

The Minnesota Chromatography Forum invites you to participate in its 30<sup>th</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, May 1, 2009**

## 2009 MCF SPRING SYMPOSIUM / COURSE REGISTRATION FORM

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

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

Spring Symposium (.5 CEU) (May 14) \$ 125.00 adv-reg. \$ \_\_\_\_\_

**Advanced Registration Deadline – April 28** \$ 150.00 on-site \$ \_\_\_\_\_Spring Symposium **with course** (May 12-14) \$ 70.00 \$ \_\_\_\_\_

Spring Symposium: Full Time students (May 14) \$ 35.00 \$ \_\_\_\_\_

Spring Symposium: Students presenting oral papers (May 14) 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 14) but short course participants may register for the Spring Symposium for only \$70! **Deadline for Course Registration is April 28, 2009.**

“Troubleshooting HPLC Systems” (May 12-13) \$ 430.00 \$ \_\_\_\_\_

“Advanced GC Troubleshooting” (May 12-13) \$ 430.00 \$ \_\_\_\_\_

“Mass Spectral Interpretation” (May 12.13) \$ 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.) \$ \_\_\_\_\_

Visa, MasterCard or AMEX No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name of card holder: \_\_\_\_\_

Name \_\_\_\_\_ Phone \_\_\_\_\_

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

Address \_\_\_\_\_

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

e-mail 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 hotels directly to make reservations. Please be sure to mention that you are attending Minnesota Chromatography Forum (or MCF) Spring Symposium.