

**Minnesota Chromatography Forum
26th Annual Spring Symposium
May 17-19, 2005
Earle Brown Heritage Center
Minneapolis, MN**

Abstract submission deadline for a technical presentation: April 22, 2005

Course registration deadline: May 6, 2005

Symposium Advanced Registration deadline: May 6, 2005

For further information contact Janice Jopke
by phone at (952) 949-2518 or email at ccs@mn.rr.com
Or, visit the MCF Website at www.minnchrom.org

Minnesota Chromatography Forum
PO Box 44562
Eden Prairie, MN 55344

The Minnesota Chromatography Forum invites you to participate in its 26th 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** —

“Ultra-High Pressure Liquid Chromatography”

By

Professor James W. Jorgenson
Department of Chemistry
University of North Carolina
Chapel Hill, NC

— **FOCUS SESSIONS** —

— **GENERAL SESSIONS** —

— **POSTER SESSIONS** —

— **SPECIAL TOPIC SESSIONS** —

— **INTENSIVE SHORT COURSES** —

“Troubleshooting HPLC Systems”

by **John Dolan**

“Optimizing your Methods for GC/MS”

by **Daron Decker & Fred Feyerherm**

“Mass Spectral Interpretation”

by **Cliff Jacoby and Phil Lyon**

“Solid-Phase Extraction”

by **David Wells**

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

On Wednesday, you are invited to an afternoon session of Vendor Seminars, Special Topic Sessions 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 meet fellow chromatographers.

DAILY PROGRAM

Tuesday, May 17, 2005

8:00am- 4:30pm Concurrent Short Courses
“Troubleshooting HPLC Systems”
“Optimizing your Methods for GC/MS”
“Mass Spectral Interpretation”
“Solid-Phase Extraction”

Wednesday, May 18, 2005

8:00am - 12:00pm Concurrent Short Courses
(continued)
12:30pm - 6:00pm Equipment Exhibition opens
1:00pm - 5:00pm Vendor Seminars
1:00pm - 4:00pm Special Topic Sessions
3:30pm - 5:30pm Reception and Grand Prize
Drawing in the Exhibit Hall
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.
Thursday's sessions require registration.

Thursday, May 19, 2005

7:30am - 8:30am Registration
8:30am - 10:00am Opening session
8:30am Welcome and Introductory
remarks
8:45am Palmer Award presentation
8:55am Undergraduate Research Award
9:00am Keynote Address
10:00am Refreshments
10:30am - 4:45pm Oral presentations
10:00am - 4:45pm Vendor Exhibits
12:00pm Lunch
3:00pm Refreshments and Prize
Drawings in the Exhibit Area
3:00pm - 3:30pm Authors asked to be with their
posters
5:00pm Annual Business Meeting

— SHORT COURSES —**Tuesday & Wednesday, May 17 & 18**

The Minnesota Chromatography Forum Education Committee presents four short courses in conjunction with the 2005 Spring Symposium. These 1.5 day short courses will be conducted all day May 17th and the morning of May 18th at the Earle Brown Heritage Center. **Registration deadline is May 6, 2005.** Course fees are \$425 and include luncheons, refreshments, and course materials.

The graduate student course fee is \$200, and the undergraduate fee is \$100. A current fee statement from your school is required for the student discount.

— SPECIAL TOPIC SESSIONS —**Wednesday Afternoon, May 18**

Special Topic Sessions will be held on Wednesday afternoon. The Special Topic Sessions will address practical laboratory topics in HPLC, GC and Mass Spectrometry. 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.

1:00pm **HPLC** John Dolan
Dan Marchand

2:00pm **GC** Daron Decker

3:00pm **MS** Cliff Jacoby
Cleston Lange

— FOCUS TOPICS & INVITED SPEAKERS —**Thursday, May 19****HPLC**

Peter Schoenmakers, University of Amsterdam

Gas Chromatography

Professor Robert Synovec, University of WA

Mass Spectrometry

Professor Timothy Griffin, University of MN

CE

Tim Wehr, Bio-Rad Laboratories

— KEYNOTE ADDRESS —**Thursday, May 19****“Ultra-High Pressure Liquid Chromatography”****By Professor James W. Jorgenson****Department of Chemistry****University of North Carolina****Chapel Hill, NC**

The history of HPLC has seen a progression in the use of columns packed with particles of decreasing size. Decreasing particle size has led to smaller values of the plate height and faster optimum velocities. Due to pressure limitations of existing HPLC equipment however, this trend has translated, not into columns of increasing separation efficiency, but instead, into columns offering faster analysis times. The 400 bar pressure limit of current HPLC technology is an arbitrary limit. The use of much higher pressure allows the use of columns 40 cm long, packed with 1 micron particles, delivering 250,000 theoretical plates with column void times of 2 minutes.

Hardware (pumps, valves, injectors, connecting tubing, columns) must be made which can withstand such high pressure while in contact with solvents ranging from aqueous salt solutions to polar and non-polar organic solvents. Significant amounts of heat can be generated in pumping solvents at optimum velocities through such a highly restrictive bed of particles. In a column of conventional diameter (4.6 mm), this heat will result in axial and radial temperature gradients, which will lead to excessive band spreading. Packed capillary columns can be used to reduce this difficulty. Analyte distribution coefficients are also a function of pressure. This might result in inconvenient and/or confusing changes in relative retention times of analytes as a function of operating pressure. The design and performance of a system capable of gradient elution liquid chromatography in packed capillary columns at pressures in excess of 7,000 bar (100,000 PSI) will be described. Results of the separations of small organics, peptides, and proteins using this system, and its coupling to mass spectrometry, will also be described.

***** New for 2005 *******— GRAND PRIZE DRAWING —****Wednesday Afternoon, May 18******* Two travel vouchers for NW airlines *****

COURSE OUTLINES

“Troubleshooting HPLC Systems”

by John Dolan

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 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. 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. Students with a working knowledge of HPLC with some hands-on experience will benefit most from this course.

“Optimizing your Methods for GC/MS”

by Daron Decker & Fred Feyerherm

This course will quickly review how the GC/MS works, what conditions affect the GC/MS and how to get the most out of your instrument. GC column selection considerations will be discussed when using the GC/MS. Discussion on column dimensions, bleed characteristics, inertness and stationary phase type. The course will include real-life examples on how to optimize GC/MS analysis. We encourage students to bring their unoptimized analyses to the course for real time suggestions.

Course Outline:

1. Basic GC/MS hardware with considerations for optimal performance.
2. Chemical Ionization - how does it work and when is it used.
3. Column & inlet considerations, and carrier gas choices for GC/MS
4. Faster GC/MS
5. Multidimensional GC/MS - solving complex separation problems
6. Guide to ultra-trace analysis in a complex matrix: Do I really need a triple quad GC/MS?

“Mass Spectral Interpretation”

by Cliff Jacoby and Phil Lyon

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

“Solid-Phase Extraction”

by David Wells

This practical 1.5 day course teaches the fundamental strategies for using solid-phase extraction (SPE) to prepare samples for chromatographic analysis. A thorough review of product formats, techniques and applications provides the student with the knowledge to use SPE efficiently and successfully. Valuable information is also presented on how to develop, optimize, and troubleshoot SPE methods. Discussions and problem-solving exercises are used to reinforce the subject material.

The course is intended for scientists and supervisors in all fields of analytical science who are interested in implementing and/or expanding their use of solid-phase extraction as a sample preparation technique. The topics presented will allow scientists to improve existing methods, develop new methods and increase their overall productivity. Beginners and current users of SPE will both benefit from the course material as taught by a recognized expert.

DAY 1

- Strategies for Sample Preparation
- SPE Product Formats
- Fundamentals of Extraction Chemistry
- Sorbent Chemistries and Attraction Mechanisms
- Review and Problem Solving Exercises
- Applications for Solid-Phase Extraction

DAY 2

- Strategies for SPE Method Development
- Method Optimization and Troubleshooting
- Detailed Examples of SPE Method Development Projects: Environmental, Food and Pharmaceutical
- Review and Problem Solving Exercises
- Resources for Further Information

Refer to MCF Web Page

For Updated Symposium Information

www.minnchrom.org

BIOGRAPHICAL SKETCHES OF COURSE INSTRUCTORS

Dr. John Dolan is the vice-president and general manager of BASi Northwest Laboratory. 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, the DryLab software business was sold to Rheodyne and Bioanalytical Systems purchased the laboratory. John continues to teach LC training courses for LC Resources and manage the laboratory at BASi Northwest. 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). Daron 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. Daron currently lives in Pearland, TX (south of Houston) with his wife of 18 years and their 4 children. Daron is the 2003 recipient of the MCF Palmer Award.

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Fred Feyerherm works for Agilent Technologies as a GC-GC/MS Applications Engineer. Fred specializes in GC and GC/MS Pesticides, Environmental, Petrochemical, Forensic Applications and NIDA labs. Fred has developed many methods for the Olympic committee, many branches of the federal government and numerous private consulting laboratories. Over the last ten years he has worked to bring high speed GC into many labs and multiple applications. Fred has a BS in Chemistry from University of Texas at Austin. Prior to joining HP (now Agilent) in 1981, Fred was an analytical chemist at Dow Chemical. Fred was also a chemistry dept staff at the University of Houston, in charge of departmental instruments. He was also a lab manager for a geochemical service laboratory. Fred has a total of 34 years in gas chromatography experience, and 30 years in GC/MS experience.

Dr. David Wells is President and Principal Scientist at Sample Prep Solutions Company in St. Paul, Minnesota. Sample Prep Solutions provides educational, consulting and technical support services to help pharmaceutical and biotech laboratory professionals improve sample prep productivity. Seminars and courses on solid-phase extraction, high throughput techniques, and automation strategies are frequently presented on request and at regional scientific conferences.

Dr. Wells has been involved with the development and implementation of high throughput techniques for sample preparation for most of his career. Prior to forming Sample Prep Solutions 6 years ago, David worked for the 3M Company for 12 years in various R&D positions in drug metabolism, bioanalytical chemistry, product development and technical service. While at 3M, he joined the company's entrepreneurial effort to develop sample preparation products based on a novel membrane technology. This project resulted in the manufacture, sale and support of solid-phase extraction disk cartridges and 96-well plates.

Recognized internationally as a leading authority in solid-phase extraction, David has published many articles on the subject. His writings include 18 papers, 3 book chapters and his own book published by Elsevier Science titled, "High Throughput Bioanalytical Sample Preparation: Methods and Automation Strategies." This book is an authoritative reference on the current state-of-the-art in sample preparation techniques for bioanalysis. David received his Ph.D. from the University of Kentucky College of Pharmacy and a B.S. from Ohio Northern University College of Pharmacy.

Cliff Jacoby, Ph.D., is a Senior Research Specialist at 3M Pharmaceuticals where he is currently the Section Head of the Bioanalytical Chemistry Lab in the Pharmacokinetics and Drug Metabolism department. He has responsibility for the quantitation and metabolite identification for all discovery, pre-clinical and clinical projects within 3M Pharmaceuticals. Cliff received his B.S. degree in Chemistry from the University of Nebraska – Omaha, and his Ph.D. in Analytical Chemistry from the University of Nebraska-Lincoln at the NSF Midwest Center for Mass Spectrometry. Cliff joined 3M in the Corporate Research Lab where he worked in the Mass Spectrometry Lab for three years. He then joined 3M Pharmaceuticals where he spent four years supervising the Analytical Research and Development Mass Spectrometry Lab. He transferred to the Pharmacokinetics and Drug Metabolism department as the Section Head of the Bioanalytical Lab February of 2000.

Phil Lyon, Ph.D., is a technical manager with the Analytical Research and Development group in 3M Pharmaceuticals. He did his undergraduate work in chemistry at the University of Nebraska and received a Ph.D. in Medicinal Chemistry from the University of Minnesota. For five years he served as Assistant Director of the Midwest Center for MS at the University of Nebraska, then as lab manager for an environmental testing firm for two years prior to joining 3M. Phil spent eight years in 3M Corporate Research Labs heading the MS efforts then moved to the Pharmaceuticals Division. The focus of his research and publications are on applications of mass spectrometry to analytical problem solving. Dr. Lyon helped organize the Minnesota Mass Spectrometry Discussion Group and has been the primary instructor of the MCF Mass Spectral Interpretation Class for the last 20 years.

Refer to MCF Web Page

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- KEYNOTE SPEAKER -

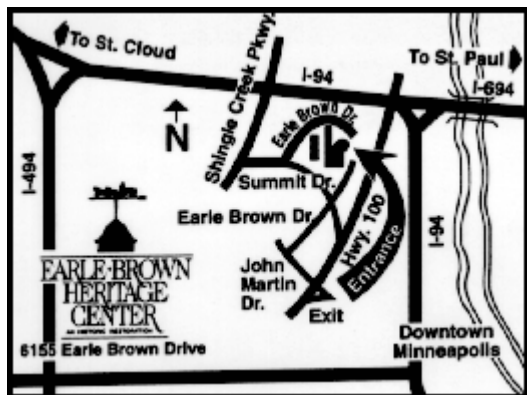
Professor James W. Jorgenson, Ph.D., is the department chair and the William Rand Kenan, Jr. Distinguished Professor of Chemistry at the University of North Carolina – Chapel Hill. He received a B.S. in chemistry from Northern Illinois University, and a Ph.D. in chemistry from Indiana University under the guidance of Professor Milos Novotny. Among the honors that he has received are: the American Chemical Society Analytical Division Award in Chemical Instrumentation, the Martin Medal of the Chromatographic Society, the American Chemical Society Award in Chromatography, the Golay Medal, the Eastern Analytical Symposium Award in Separation Science, the Torben Bergman Medal of the Swedish Chemical Society, and the Dal Nogare Award. He has served on numerous editorial boards for scientific journals. Professor Jorgenson is one of the originators of capillary electrophoresis, with his first publications on this topic appearing in 1981.

Current research in Professor Jorgenson's lab concerns harnessing the power of techniques such as capillary electrophoresis (CE), capillary liquid chromatography (LC), and mass spectroscopy (MS), to solve problems in complex mixture analysis. Samples of biological and environmental origin are usually complex in character, containing many hundreds to thousands of detectable compounds. Mixtures of such great complexity are a challenge to the resolving power of existing analytical methods. For an analytical technique to successfully handle such samples, the technique must have either extreme selectivity for a particular compound of interest, or the technique must provide a great excess of resolution space (peak capacity) for the compounds to be resolved into. Professor Jorgenson's lab is currently pursuing techniques of great peak capacity, such as combined liquid chromatography-capillary electrophoresis (LC-CE), as well as techniques with extreme resolving power, such as flow counterbalanced capillary electrophoresis (FCCE).

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

2005 MCF SPRING SYMPOSIUM / COURSE REGISTRATION FORM

MCF MEMBERSHIP ONLY (1-YEAR) \$ 20.00 \$ _____

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

Spring Symposium (.5 CEU) (May 19) \$ 95.00 adv-reg. \$ _____

Advanced Registration Deadline - May 6 \$ 125.00 on-site \$ _____

Spring Symposium with course (May 17-19) \$ 60.00 \$ _____

Spring Symposium: FT students (May 19) \$ 25.00 \$ _____

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 19) but short course participants may register for the Spring Symposium for only \$60! Deadline for Course Registration is May 6, 2004.

“Optimizing Methods for GC/MS” (May 17-18) \$ 425.00 \$ _____

“Troubleshooting HPLC Systems” (May 17-18) \$ 425.00 \$ _____

“Mass Spectral Interpretation” (May 17-18) \$ 425.00 \$ _____

“Solid Phase Extraction” (May 17-18) \$ 425.00 \$ _____

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: ccs@mn.rr.com
Phone: (952) 949-2518
FAX: (952) 934-6741

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

Baymont Inn, Brooklyn Center (763-561-8400) at \$59 per night, and

Country Inn & Suites, Brooklyn Center (763-561-0900) at \$89 single, \$99 double per night

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.