— SHORT COURSES —

Tuesday & Wednesday, May 6 & 7

The Minnesota Chromatography Forum Education Committee presents four short courses in conjunction with the 2014 Spring Symposium. These courses will be conducted all day May 6th and the morning of May 7th at the Earle Brown Heritage Center. **The registration deadline is April 25, 2014.** Course fees are $475 for early registration before April 1, and $495 from April 1 to April 25. Registration fees include luncheons, refreshments, and course materials. Course attendees can register for the Spring Symposium at reduced rates. Refer to the registration form for details.

Discounts are available for full time students, please contact the events coordinator to authenticate and provide discount information.

— COURSE DESCRIPTION —

"**Making HPLC Methods Work**"

by John Dolan

This course is designed for laboratory workers who are responsible for running HPLC methods on a day-to-day basis. No prior experience is needed, although those with some laboratory experience will certainly benefit more than those with no experience at all. New workers in the lab, scientists from other disciplines that have to use HPLC as a tool, laboratory managers, and quality assurance staff will all benefit from this course. This class focuses on existing HPLC methods and how to keep them running reliably. It includes a look at how the hardware operates, how reversed- and normal-phase separations work, and troubleshooting separation problems. You will gain an understanding about what happens "behind the scenes" in an HPLC method. Armed with this understanding of the equipment and separations, you will be more able to keep methods working reliably and getting them back to operation when problems occur. You will understand some of the quality-related practices that can be used to improve the reliability and usefulness of the data you gather.

Course Outline: Making HPLC Methods Work

I. Introduction and HPLC Basics
   a. System suitability
   b. Basic HPLC processes
   c. Key chromatographic measurements
II. HPLC Equipment
   a. Reservoirs & mobile phases
   b. Pumps & mixing
   c. Tubing & fittings
   d. Injectors & autosamplers
   e. Detectors
III. HPLC Columns
   a. The underlying silica
   b. Bonded phases
   c. Care & treatment of columns
IV. Reversed-Phase HPLC
   a. Retention mechanism
   b. The role of the solvent
   c. The role of the bonded phase
   d. Other variables: pH, temperature, ion pairing
V. Normal-Phase and HILIC
   a. Retention fundamentals
   b. Solvents
   c. HILIC (hydrophilic interaction chromatography)
VI. Troubleshooting HPLC Separations
   a. Why columns die
   b. Physical problems with the column
   c. Chemical problems with the column
   d. Non-column problems
VII. Quality Issues
   a. Validation
   b. Regulatory issues
   c. System suitability
   d. Improving precision
   e. Method adjustment vs. method change

***** CALL FOR PAPERS *****

ONLINE ABSTRACT SUBMISSION

Complete information for Abstract submission is available on the MCF website:

www.minnchrom.com

(from Spring Symposium, select Abstract Submission)

Abstracts may also be submitted by e-mail to:

mcfabstracts@gmail.com

— COURSE DESCRIPTION —

"**Sampling and Sample Preparation**"

by Doug Raynie

This short course is designed to provide participants with an in-depth understanding of the role of sampling and sample preparation in analytical chemistry. Upon successful completion of the course, the participant will have an understanding of sampling consideration and approaches, and sample preparation strategies. The course will begin by discussing the role of sampling, sample types, sample size, sample storage and handling, etc. The heart of the course will be the presentation of traditional and newly developed chemical extraction methods for sample preparation. Finally, post-extraction sample treatment will be addressed. Throughout the course practical and theoretical aspects of the outlined topics and application case studies will be presented. This short course is intended for both bench and supervisory chemists responsible for the method development and analytical extraction of samples prior to gravimetric, chromatographic, or spectroscopic determination.

Course Outline

1. INTRODUCTION
   a. General Principles
   b. Trends in Sample Preparation

2. STATISTICAL CONSIDERATIONS
   a. Statistics
   b. Reference Standards
   c. Uncertainty
   d. Quantitative Methods
   e. Qualification and Validation

3. SAMPLING
   a. Types of Samples
   b. Sample Size Selection
   c. Sample Size Reduction
   d. Particle Size Reduction

4. GENERAL EXTRACTION CONSIDERATIONS
   a. Thermodynamic Properties
   b. Kinetics
   c. Classification of Methods According to Properties

5. EXTRACTION FROM LIQUID SAMPLES
   a. Distillation Methods
   b. Batch Methods
   c. Continuous Methods
   d. Sorptive Methods
   e. Membrane Methods

6. EXTRACTION FROM SOLID SAMPLES
   a. General Principles
   b. Shake-Flask
   c. Soxhlet and Automated Soxhlet
   d. Forced-Flow Leaching
   e. Accelerated Solvent Extraction
   f. Supercritical Fluid Extraction
   g. Microwave-Assisted Extraction
   h. Ultrasound Extraction
   i. Method Comparison

7. EXTRACTION OF VOLATILE ANALYTES
   a. Headspace Sampling
   b. Purge and Trap
   c. Thermal Desorption

8. POST-EXTRACTION SAMPLE HANDLING
   a. Sample Clean-up
   b. Solvent Drying
   c. Solvent Evaporation
   d. Derivatization

— COURSE DESCRIPTION —

"GC and GC/MS Workshop"

by Daron Decker and Fred Feyerherm

There are day to day questions that plague the GC analyst in the lab. How important is column installation and conditioning? What about inlet liners? Why am I having to do maintenance so often? What kind of maintenance do I have to do and what things are optional? What kills columns and what is urban legend? What column is good for what analysis? Will a longer column solve my problems? This is a funny looking chromatogram, what does it mean? Why are there extra peaks? How often do I need to tune the MS? What indicates it is time to clean the source? Is there any new technology that could help me with my issues?

This day and a half workshop will let participants get those answers they've always had about certain aspects of their GC or GC/MS analyses. The course instructors bring a wealth of GC and GC/MS knowledge and over 60 years of combined experience. Attendees will literally get to have their specific questions answered as the instructors poll them both prior to the course via email and at the beginning of the workshop, and then proceed to present material on that information. No course manuals will be provided for obvious reasons but all presented material will be distributed to participants on a USB memory stick at the end of the course.

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 40 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 340 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 DryLab 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 co-authored three books and more than 125 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 and the 2007 Dal Nogare from the Chromatography Forum of Delaware Valley.

Dr. Douglas Raynie is an Associate Research Professor in the Department of Chemistry and Biochemistry at South Dakota State University. Prior to joining SDSU, he was employed for eleven years as a Senior Scientist at Procter and Gamble's Corporate Research Division. He earned his Ph.D. at Brigham Young University under the direction of Dr. Milton L. Lee. Dr. Raynie's research interests include high-resolution chromatography, chromatographic sample preparation (including ASE, SFE, SPME, and SPE), chromatography theory, green chemistry, and problem-based learning in analytical chemistry. At P&G, he introduced ASE to industry as one of the world's first practitioners of the technique. He is widely published in these fields and served on the editorial advisory boards of *Pharmaceutical Formulation and Quality*, *Journal of Microcolumn Separations* and the *Encyclopedia of Separation Science*. He is a member of the American Chemical Society (Division of Analytical Chemistry and Subdivision on Chromatography), the American Association for the Advancement of Science, and the International Society for the Advancement of Supercritical Fluids.

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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 longtime proponent of the MCF and member since 1987. He currently lives in Pearland, TX (south of Houston) with his wife 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 40 years experience in gas chromatography, and 36 years experience in GC/MS.

***** ON-LINE REGISTRATION *****

***** at www.minnchrom.com *****

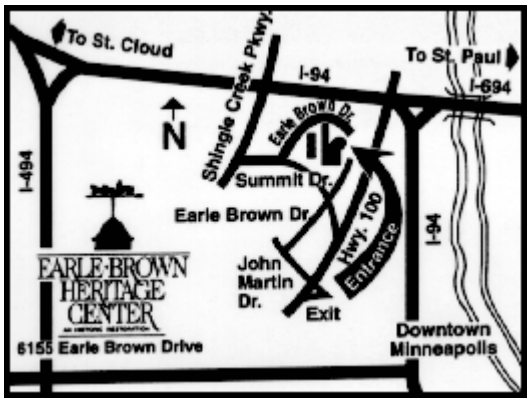
For Updated Symposium Info

www.minnchrom.com

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



***** ON-LINE REGISTRATION *****

***** at www.minnchrom.com *****

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 on the MCF website

www.minnchrom.com

2014 MCF SPRING SYMPOSIUM / COURSE / MEMBERSHIP REGISTRATION FORM

***** On-Line Registration for MCF Spring Symposium at www.minnchrom.com *****

35th Annual MCF Spring Symposium May 6-8, 2014

MCF MEMBERSHIP ONLY (1-YEAR) $ 25.00

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

Spring Symposium (May 9)		
Advanced Registration:	$115 before April 1	$125 from April 1 to April 25
On-site Registration	$150 after April 25	
Spring Symposium **with course**	$100 before April 1	$115 from April 1 to April 25

Please note: Discounts are available for full time students, please contact events coordinator to authenticate and provide discount.

SHORT COURSE REGISTRATION

Short courses include luncheon for 2 days and complimentary 1-year MCF membership.
Short course fees do not include registration for Spring Symposium (May 9) but short course participants may register for the Spring Symposium for a reduced rate! Deadline for Course Registration is April 25, 2014.

Short Course Registration:	$475 before April 1	$495 from April 1 to April 25

Short Course Offerings:

"Making HPLC Methods Work" by John Dolan	(May 6-7)
"Sampling and Sample Preparation" by Doug Raynie	(May 6-7)
"GC and GC/MS Workshop" by Daron Decker & Fred Feyerherm	(May 6-7)

Event Coordinator:
Jenn Rosen
Email: jenn@rosetreeevents.com
Phone: 612-990-3924

Where to Stay: The MCF has blocked a limited number of rooms for Spring Symposium participants at:
Embassy Suites, Brooklyn Center (**763.560.2700**) at $115 / night (for single/double room).
Deadline for MCF room rate at Embassy Suites: April 28, 2014.
This hotel is connected to the 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) or register online at:
http://embassysuites.hilton.com/en/es/groups/personalized/M/MSPBRES-MCF-20140505/index.jhtml

***** ON-LINE REGISTRATION for MCF SPRING SYMPOSIUM *****

***** at www.minnchrom.com *****