

**Minnesota Chromatography Forum  
25th Annual Spring Symposium  
May 11-13, 2004  
Earle Brown Heritage Center  
Minneapolis, MN**

**Course registration deadline: April 28, 2004**

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

### SHORT COURSES

The Minnesota Chromatography Forum Education Committee presents four short courses in conjunction with the 2004 Spring Symposium. These 1.5 day short 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. **Registration deadline is April 28, 2004.** Course fees are \$380 and include luncheons, refreshments, and course materials.

The graduate student course fee is \$180, and the undergraduate fee is \$90. A current fee statement from your school is required for the student discount.

### COURSE OUTLINES

#### **“Topics for Advanced GC” by Walt Jennings & Daron Decker**

The purpose of this workshop is to provide training and insight in advanced applications and techniques for GC, along with their application to practical industry and laboratory problems. The course will include classroom instruction along with a question and answer session for problems encountered by the students in the class. All class participants are encouraged to bring issues and concerns to the course for discussion.

Topics to be covered include:

- ~Quick theory review
- ~Developing temperature programs
- ~Defining your sample
- ~Importance of retention time locking
- ~Fast GC
- ~Advanced injection techniques
- ~PLOT columns for light hydrocarbon separations
- ~High temperature GC
- ~Derivatization Techniques for Better GC
- ~Recent advances in stationary phases
- ~Detectors

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

#### **“Size Exclusion Chromatography and Related Polymer Separation Techniques” by Howard Barth**

Topics to be Covered:

- Review of polymer structure-property relationships
- Definitions of molecular weight averages, molecular weight distribution, and molecular size
- Importance of MW and MWD measurements
- SEC principles and theory
- Calibration approaches
- Universal calibration
- Polymer branching
- Mobile phase and column selection
- Fundamentals of light scattering and viscometry
- Newer SEC detection approaches: FT-IR, ESI-MS, MALDI-TOF/MS, and online NMR
- Polymer compositional heterogeneity
- HPLC of polymers
- Temperature rising elution fractionation
- Open discussion of polymer separation problems

#### **“Solid-Phase Extraction” by David Wells**

This practical 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.

## BIOGRAPHICAL SKETCHES OF COURSE INSTRUCTORS

**Prof. Dr. Walter Jennings** has pursued successful careers in both academia and industry. He is an Emeritus Professor of the University of California, where he completed a thirty-five year career on the Davis Campus. He constructed his first gas chromatograph in 1954, and authored a number of books on chromatography. His most recent book, "Analytical Gas Chromatography", second edition, W. Jennings, E. Mittlefehldt, and P. Stremple, Academic Press (1997) has been hailed as "A Classic". He has also served as Editor for several multi-authored books, and published some 300 scientific papers. His laboratory at the University served as a chromatographic Mecca, attracting graduate students, post doctoral scholars, and other collaborators from over twenty five different countries. Their foci included characterization and elucidation of the biosynthetic pathways of volatiles isolated from natural products, techniques of sample preparation, the design and modification of instruments and accessories, studies on fundamental chromatographic relationships, and developments in column deactivation and manufacture. Their efforts in window diagramming, combined with research into stationary phase chemistry, led to the first synthesis of a bonded, crosslinked stationary phase whose selectivity was specifically tailored to maximize the separation factors of all solute pairs in a given mixture. Walt was also the first to demonstrate computer-generated van Deemter plots and their use in evaluating the effects of column and operational parameters. Many of the scientists who worked with Professor Jennings during this period are now well known academic Professors in their own right; some occupy eminent positions in instrument companies, and others direct the investigations of Research Departments in areas as diverse as flavor, forensic, petrochemical, pharmaceutical, and environmental analysis.

In collaboration with one of his completing doctoral students, he founded J&W Scientific, Inc. in 1974. J&W grew to become the world's largest supplier of fused silica columns, and was purchased in 1986 by Fisons plc. In 1996, a management group led by Professor Jennings and backed by the corporate buyout arm of Dillon Reade, Inc., repurchased the company, where he continues to function as a Consultant.

Professor Jennings has spent sabbatical leaves in Austria, Germany, and Switzerland. Under the auspices of the International Atomic Energy Agency, he has served as Adviser in Gas Chromatography to the governments of, and spent considerable time working in, Bulgaria and Poland. He is recognized as a "Senior American Scientist" by the German Government, and in

1973 received the prestigious "Humboldt-Preis" from the Alexander von Humboldt Foundation, consisting of a substantial endowment, and a one-year appointment as a Senior American Scientist in residence.

His other awards include the Award of Merit from the Chicago Chromatography Discussion Group, the National Chromatography Award of the Northeast Regional Chromatography Discussion Group, the L.S. Palmer Award of the Minnesota Chromatography Forum, the Founders Award in Gas Chromatography administered by the Beckman Corporation, and others from the French Association of Analytical Chemists, the University of Bologna, the Taiwanese Food Chemists Society, and the Society of Flavor Chemists. In 1996, Professor Jennings received the M.J.E. Golay Award at the 18th International Symposium on Capillary Chromatography; in 1997, the Keene Dimick Award at the Pittsburgh Conference, and the A.J.P. Martin Gold Medal from the Chromatographic Society (UK) for his "contributions to the field of chromatography"; in 1998, the Silver Jubilee Award of the 19th International Symposium on Capillary Chromatography at Riva del Garde, Italy. In 1999, Professor Jennings was honored by his alma mater, the University of California, Davis, by the bestowal of their highest award to individuals, the Award of Distinction. At the 2002 Pittsburgh Conference he received the Dal Nogare Award for contributions to gas chromatography

Professor Jennings is also a Past Chairman of the American Chemical Society's Subdivisions of Flavor Chemistry, and of Chromatography and Separation Science, and has always been an active supporter of chromatography discussion groups. In each year since the early 1970s, he has instructed more than thirty *extra-curricular* courses in gas chromatography, at points all over the world. It has been estimated that over 30,000 chromatographers from all walks of life have attended these courses to which Professor Emeritus Jennings remains fully committed.

Refer to MCF Web Page for Short Course and  
Symposium Information

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

**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 17 years and their 4 children. Daron is the 2003 recipient of the MCF Palmer Award.

**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, LC Resources was sold to Rheodyne (training and software) and Bioanalytical Systems (laboratory). He continues to teach LC training courses for LC Resources Training Group of Rheodyne and manage the laboratory at BASi Northwest. He has written more than 90 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.

**Dr. Howard G. Barth** is Senior Research Associate of the DuPont Company, Corporate Center for Analytical Sciences, Central Research & Development, in Wilmington, Delaware. He received his B.A. (1969) and Ph.D. (1973) from Northeastern University in Boston. Dr. Barth's specialties include polymer characterization, size exclusion chromatography, and HPLC. He has published over 90 technical articles, reviews, and chapters in these and related fields. Howard has edited Modern Methods

of Particle Size Analysis (Wiley, 1984), coedited Modern Methods of Polymer Characterization (Wiley, 1991), and co-authored, Size Exclusion Chromatography (Springer-Verlag, 1999). He has also edited five symposium volumes published in the Journal of Applied Polymer Science, and coedited two ACS symposium volumes, Chromatographic Characterization of Polymers (1995), and Hyphenated Techniques in Polymer Characterization (1994). Dr. Barth was an associate editor of the Journal of Applied Polymer Science, and is presently a series editor of Springer-Verlag's Polymer Science Laboratory books. Currently, Howard is editor-in-chief of the International Journal of Polymer Analysis and Characterization. Dr. Barth is chair of the International Symposium on Polymer Analysis and Characterization.

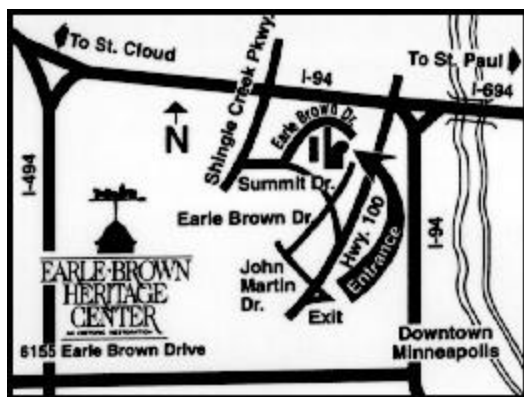
**Dr. David Wells** is President and Principal Scientist at Sample Prep Solutions Company in St. Paul, Minnesota. Sample Prep Solutions provides educational, consulting and technical support services to help pharmaceutical and biotech laboratory professionals improve sample prep productivity. Seminars 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 5 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.

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**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)

**2004 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 13) \$ 80.00 adv-reg. \$ \_\_\_\_\_

**Advanced Registration Deadline - May 4** \$ 90.00 on-site \$ \_\_\_\_\_

Spring Symposium **with course** (May 11-13) \$ 60.00 \$ \_\_\_\_\_

Spring Symposium: FT students (May 13) \$ 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 13) but short course participants may register for the Spring Symposium for only \$60! Deadline for Course Registration is April 28, 2004.**

“Topics for Advanced Gas Chromatography” (May 11-12) \$ 380.00 \$ \_\_\_\_\_

“Troubleshooting HPLC Systems” (May 11-12) \$ 380.00 \$ \_\_\_\_\_

“Fundamentals of Size Exclusion Chromatography” (May 11-12) \$ 380.00 \$ \_\_\_\_\_

“Solid Phase Extraction” (May 11-12) \$ 380.00 \$ \_\_\_\_\_

Full-time Students: Graduate: \$ call Undergraduate: \$ call \$ \_\_\_\_\_

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

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

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

**Reservations need to be made by April 28th.** 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.