



MCF RETENTION TIMES

Official Newsletter of MCF

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PRESIDENT'S CORNER

Ron Schoonmaker, MCF President

Greetings to my fellow chromatographers! Another cycle of MCF activities is well underway. I hope you have had a chance to participate in some of them.

My thanks go to the volunteers who have labored to provide excellent classes, the Fall Quarterly Meeting, and ongoing efforts for future events. I am looking forward to another Family Day event—last year, my daughter and I enjoyed separating food dyes from candy at the Science Museum of Minnesota. This year, we look forward to hosting MCF members at the Bakken Museum. I hope to see you there, so please find the event details included in this newsletter!

I also hope you are holding the dates of our Spring Symposium. Please consider discussing your chromatographic successes by participating in the technical program or by submitting a poster. While the Symposium is a few months off, the call for abstracts is coming soon, and I look forward to having my own chromatographic skills further honed by knowledge shared by our knowledgeable membership.

There is no doubt that we are a world-class organization for the sharing of chromatographic information. In fact, a fantastic summary of the MCF's history and current activities has been recently published in the November 2009 issue of LC/GC Magazine (vol. 27, No. 11). If you have not had a chance to see it, I encourage you to dig out your issue, borrow your co-worker's, or look it up online. Thank you, Peter Johnson, for writing this excellent piece.

Finally, I'd like to recognize the vendors who underwrite many MCF activities. These vendors offer technical support and the latest chromatographic technology; and they support the mission and ongoing activities of MCF with their paid advertising, symposium booths, and other sponsorships. Their partnership is vital to the health of the MCF as they provide financial, informational, and technical support. Please support our vendors!

Best wishes to you as you continue your chromatographic separations. May your methods prove robust, and your peaks remain well resolved and Gaussian!

DID YOU KNOW?

As an MCF member, you may post job-wanted ads at no cost. Organizations may advertise a business or job opening for a nominal fee. Please contact Joanne Costello for more information about event and job postings in the newsletter and website (jcostello@mmm.com or 651-736-8441).

SYMPOSIUM CORNER

LeeAnn Higgins, MCF Symposium Committee Chair

Symposium Committee Members: Peter Johnson (Program); Steve Albrecht (Vendors/Exhibits); Jan Jopke (Meeting Coordination); Nate Otte (Publicity/Facilities); Sandy McDonald (Program); Lori McNamara (Publicity/Recruiting)

Announcing the 31st
MCF Spring Symposium
May 11th to 13th, 2010
Symposium: Wed to Thurs, May 12th to 13th
Short Courses: Tues to Wed, May 11th to 12th

Symposium event opens with Vendor Exhibit Wednesday after completion of the short courses. *Thanks in advance to all the vendors who participate, without whom this exciting event would not be possible.*

Highlights of the Wed Symposium activities:

- Vendor Exhibits
- Special Topics (open forum discussion)
- Vendor Seminars
- Reception
- Poster presentations

Thursday Symposium activities:

- Keynote Address
- Focus speakers
- Technical presentations – 3 concurrent sessions
- 2010 Undergraduate Award distribution
- 2009 Undergraduate Award presentation

Symposium amenities:

- Beverages
- Food
- Free Gift
- *Network/Socialize with your colleagues!*

* Please consider a 20 min presentation or poster presentation*

The Technical Program is populated with presentations from people like **YOU**. Communicate with your colleagues about selected aspects of your chromatographic endeavors, including-all-related-hyphenated-techniques. Poster presentation is a fun, informal way to display your researcher endeavors and invoke casual discussion.

Registration

- Advanced – discount applied
- On-site
- Student presenters: No Fee

Visit http://www.minnchrom.org/Spring_Symposium.htm for details, deadlines, abstract submission. **See you in May!!**

DR. PETER CARR - AWARDEE*By Lin Ma, 3M Company*

Congratulations to **Professor Peter Carr** of the University of Minnesota on receiving the **2009 National ACS Award in Analytical Chemistry!**

Established in 1947, the ACS Award in Analytical Chemistry annually recognizes an individual in the United States or Canada for outstanding contributions to the science of analytical chemistry. Currently sponsored by the Battelle Memorial Institute since 2004, the Fisher Scientific Co. was the key sponsor from the award's establishment in 1947 through 2002.

Prof. Carr contributed in a variety of areas of analytical chemistry, including electrochemistry, ion selective electrodes, thermochemistry, and chromatography. His research interests in chromatography focused on understanding the nature of solute-solvent interactions as they pertain to the prediction of retention, selectivity and optimization in chromatography, affinity chromatography, the theory of nonlinear chromatography, and the development of zirconia-based chemically stable supports for high pressure and high temperature liquid chromatography. Most recently, he devoted his effort to ultra-fast and two-dimensional HPLC.

At the 238th ACS National Meeting in Washington, DC, August 2009, Analytical Chemistry Division dedicated a one-day symposium in honor of Prof. Carr on "Theory Guides, Experiment Decides". In the evening, his former students, postdocs, and collaborators gathered at Old Ebbitt Grille to celebrate his achievement with him and his wife. The celebration went beyond his scientific contributions in the analytical field to his career as an outstanding teacher and mentor. At the dinner, he received a unique plaque, which reads:

"Treat people as if they were what they ought to be and you help them to become what they are capable of being." -- Johann Wolfgang von Goethe

*With sincere thanks for helping us become that which we are capable of becoming,
Your former students*

Prof. Carr, an original founder of MCF, also received the 1997 National ACS Award in Chromatography.

EDUCATION CORNER*Erin Sloan, MCF Education Committee Co-Chair**Jamie Koehler, MCF Education Committee Co-Chair*

Committee Volunteers: Gibbes Bailie, Jade Barker, Kelly Boucher, Wendy Christensen, Bill Cameron, Stephanie Drier, Cara Hagen, David Hobbs, Jean Seidel, DeWayne Townsend

The beginning of a new year is always a time for planning. Maybe your company plans their training budget at this time of the year, making it all but impossible to get approval for a short course in September or October. As the economy rebounds (albeit slowly), many companies are ramping up their training programs again and we want to make sure that you get a piece of that pie!! We've got a lot of great courses planned out for the rest of 2010, and will be more than happy to save you a seat! Every fall we offer our Beginning HPLC course and you can count on our Beginning GC course in the winter months as well. For the more experienced chromatographer, we're hoping to offer Design of Experiments (DOE) in the fall, although details still need to be set for that.

Our committee is currently gearing up for the 2010 Spring Symposium. The short course schedule is set, and we're excited to be offering three great courses this year. HPLC Troubleshooting, a course designed by John Dolan will be back and will be taught by Tom Jupille this year. He taught for us this past fall, and is an outstanding instructor!! Daron Decker will also be back to teach Installation, Care and Maintenance of GC Systems in combination with our GC laboratory. In addition, we have an exciting course titled Chemometrics in Chromatography taught by Brian Rohrback of Infometrix, Inc. which hasn't been a course topic in MCF for quite some time. Here is a brief course description:

Chemometrics in Chromatography: 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.

We hope that everyone is as excited for these courses as we are. Remember that we also have a new discount available when more than one person from a company registers for the same course. Keep your eyes open for the 2010 Spring Symposium registration materials for more details. As always, if you ever have an idea for a course or a comment that you'd like to share with the committee, don't hesitate to contact Erin at sloan.erin@gmail.com.

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BEGINNING GAS CHROMATOGRAPHY*Reviewed by David Hobbs*

Providing an excellent foundation in both the theoretical and practical aspects of gas chromatography, this year's Beginning GC course was taught by Rick Rossiter and Dr. Jean-Paul Schirlé-Keller. Dr. Schirlé-Keller, of the Department of Food Science and Nutrition at the University of Minnesota, is also a consultant with Spectra Flavor & Fragrance Research. During the 3-day course, he presented on GC history, column phases, method optimization, and qualitative analysis (including Mass Spectrometry detection). Rossiter, of 3M's Corporate Research Analytical Laboratory, focused on instrument hardware, quantitative analysis, and troubleshooting. The different backgrounds and perspectives of the two instructors provided the 15 students with a broad-based understanding of GC fundamentals.

The morning lectures were engaging: The instructors welcomed questions from students, included real-life examples and anecdotes throughout the presentation, and passed around actual instrument hardware components rather than relying solely on diagrams and descriptions. Some of the specific course content included: Types of columns and phases; proper installation, storage, and care of columns; advantages of split-flow injection; the relationship between resolution, speed, capacity, and the conditions that determine them; relative merits of different carrier gases; the importance of appropriate software integration parameters; the likely causes for common chromatographic problems; and the various approaches to analyte quantitation (including the assumptions that each approach entails). The presentations were easy to follow and had clearly been well-thought-out.

Each afternoon, the class moved to the lab and applied the information from the morning's lecture by running GC-FID instruments in small groups. The exercises were facilitated by U of M lab assistants, but all the column installations, manual injections, flow measurements, and calculations were performed by the students. On the first day, students observed how retention was affected by oven temperature, head pressure, volatility of the compound, and polarity of the compound relative to that of the stationary phase. On the second day, students calculated column efficiency and Kovats indices; determined the effects of column overloading; and practiced optimizing a method for maximum speed while maintaining baseline resolution between three compounds. On the last day, students performed manual quantitation with external and internal standards, and determined intermediate precision in manual injection between students. The hands-on exercises were particularly useful for those students with little or no practical GC experience.

Overall, the course delivered exactly what was promised: "Introductory training on the applications of GC to practical industry and laboratory analytical problems." It is highly recommended for any beginning gas chromatographer.

**JOHN E. CAMPBELL**

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ADVANCED HPLC METHOD DEVELOPMENT: A COMPREHENSIVE COURSE IN THE SYSTEMATIC DEVELOPMENT OF LIQUID CHROMATOGRAPHY SEPARATIONS

Reviewed by Stephanie Drier

k' , α , N was the mantra for the Advanced HPLC Method Development course instructed in early November by Tom Jupille. The capacity factor (k'), the relative retention (α) and column plate number (N) was the mantra that was chanted many times throughout the two day course to reinforce that a methodical approach to HPLC method development is most essential. The course was used to review and summarize important terms and equations, separation basics, columns and reverse and normal phase chromatography as they relate to method development. Tom's enthusiasm, endless knowledge base and practical application of HPLC kept everyone in the course engaged and requesting Tom's insight on practical applications of their separation science.

At different times throughout the two day course, students were placed in groups of two to perform DryLab software workshop exercises. The exercises were used to reinforce the concepts presented and show the difference between incremental and multi-variable method development strategies. Additional information was also presented on the various types and uses of detectors, including UV detection, photodiode array and mass spectrometry. Tom is a charismatic speaker with a lot of knowledge that he willingly shared with the participants through real world examples of HPLC method development and troubleshooting.

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ANNUAL MCF FAMILY EVENT*Kelly Boucher, MCF President-Elect*

Introduce your spouse, kids, nieces, nephews, grandkids, and friends to experience electrifying fun! The MCF has partnered with the Bakken Museum to explore the wonders of science. The exhibits include Frankenstein's Laboratory, Electrifying Minnesota, the Mystery of Magnetism and more. The passion for science will be inspired by helping us explore the nature and history of electricity and magnetism. We look forward to having you and your guests join us for this exciting event.

The program will be given two times on Saturday, March 27. You pick the one time that best works for you (first-come, first-served). MCF Family Day at the Bakken Museum includes a guided tour through the exhibits.

Programs at 10:00 AM and 11:45 AM
 \$7 per adult
 \$4 per child (ages 4 to 18)
 Children under 4 are always free to the Bakken Museum

Join your fellow chromatographers for a day at the Bakken Museum. Make sure your colleagues don't miss out on the latest MCF fun, and please let them know!

To register for this fun event, CTRL + click here to go directly to the form on the website. Please send the registration form with your payment to me (Kelly) at the address listed on the form. In the meantime, please feel free to contact me with any questions!

***MCF Family Day at
 The Bakken Museum
 www.thebakken.org
 March 27th, 2010
 It will be electrifying fun!
 Hope to see you there!***

FALL QUARTERLY MEETING REVIEW*By Carrie Coppock, MCF Second Year Director*

The MCF Fall Quarterly meeting was held November 17, 2009 and titled "Chromatography Isolationism". The speaker at this meeting was Dan Kempenich, Instrument Service Manager with Pace Analytical Services, Inc. Dan did a great job presenting various chromatographic difficulties and practical strategies to solve them. He had two brands of HPLC instruments set up to point out specific areas to troubleshoot. The focus was about how to use the process of elimination to figure out the source of a problem in HPLC and GC analyses. Many members of MCF attended and participated with good questions and discussion of real challenges they have faced. The practical solutions suggested by Dan combined with the discussion generated by our members made for a very informative evening.

Watch your email inboxes for information about MCF's Spring Quarterly Meeting on membrane separation technology!

CHEMISTRY IN THE KITCHEN*By Pat Sackett, MCF Secretary***Triple Chocolate Death Cake***Submitted by Pat Sackett, MCF Secretary*

Mix well:

- 1 pkg dark chocolate cake mix (not Duncan Hines)
- 1 pkg chocolate instant pudding
- 1 c nonfat plain yogurt
- ½ c cooking oil (I use olive oil)
- ½ c whiskey
- ½ c rum
- 4 large eggs
- ¼ c coffee

Beat on high speed 3 min, add: 2 c semisweet chocolate chips. Mix completely, pour into a greased Bundt or tube pan, and bake at 350°F for ~ 50 minutes, until a toothpick comes out with a few moist crumbs. Remove from the pan when cool and serve right-side-up.

CORPORATE VENDOR VOUCHERS*By Ron Schoonmaker, MCF President*

By request, the MCF Board of Directors has approved the creation of MCF gift certificate vouchers, which may be purchased by vendors to be given to customers. The goal is to provide vendors with a means of establishing customer goodwill and value while providing chromatography customers with exposure to the MCF and its opportunities for education and member interaction. Gift Certificates will have a face-value of \$25 and may be applied toward membership, symposium attendance, classes, or a fee-based MCF event. Vendors who are interested in purchasing gift certificates at a discount may contact me (Ron) at 651-733-9856.

Want to advertise your company with MCF on the website and in the newsletter?

Vendor advertising prices range from \$50 for 30 days to \$300 for one year. For more information, please contact Ron Schoonmaker at 651-733-9856.