

Welcome to the 21st Annual Mid-Canada AOAC Day

Thursday, June 10, 2010
Registration begins at 8:00 a.m.

Victoria Inn Hotel and Convention Centre
1808 Wellington Avenue, Winnipeg, Manitoba
Registration Fee - \$20.00

Includes: refreshments during morning and afternoon coffee breaks and buffet lunch

AOAC Day Highlights Laboratory Equipment/Supply Exposition

- Technical Presentations
- Annual General Meeting
- Door Prizes
- Buffet Luncheon with Keynote Speaker
Dr. Al Kristofferson,
Lake Winnipeg Research Consortium Inc.
- Manitoba Mass Spectrometry User's Group
(MMSUG) Workshop

Grand Prize Draws..

- 8 GB iPod Touch
- 3 Draws for a \$50 Gift
Certificate

Donated by Mid-Canada AOAC

AOAC Day Exhibitors

ABS Sciex
Agilent Technologies
ATS Scientific
Brinkmann Instruments

Caledon Laboratories Ltd.
CE Elantech
Chromatographic Specialties
EMD
K' (Prime) Technologies
Medicorp
Neogen Corporation
R-Biopharm
Sigma Aldrich
Vicam

ACP Chemicals
Anachemia Science
Beckman Coulter
(CALA) Canadian Association for
Laboratory Accreditation
Canadian Life Science
Cedarlane Labs
Delta Scientific
GE Healthcare
London Scientific
Mettler Toledo
PerkinElmer
Romer Labs
Thermo Fisher
Waters



Special thanks to: Anachemia Science & Waters Canada for donating the use of A/V equipment and to Anachemia Science for the design and preparation of this program

Technical Program

Morning Sessions

Room – Embassy C
Session Chair - Andrew Minkevich

9:00 - 9:20

NHPD GMP/ Site Licensing

Doreen Steen, MA, BCT, RAC

9:30 - 9:50

The benefits (advantages) of laboratory accreditation

C. Charles Brimley, MSc, Bed, AScT, CEO, Canadian Association of Laboratory Accreditation Inc. (CALA)

Room – Embassy D
Session Chair - Nubia Viafara

9:00 - 9:20

An introduction to supercritical fluid chromatography (SFC). A faster, safer, greener way to perform both chiral and achiral chromatography.

David Loveland, Senior Account Representative, Waters Limited

9:30 - 9:50

Membrane fouling reduction in an electrically enhanced MBR system

Victor Wei, PhD candidate, Manager, Environmental Engineering Laboratory, Civil Engineering Department, University of Manitoba

Room – Embassy E
Session Chair - Greg Sliva

9:00 to 9:20

Application of Mass Spectrometry for Identification of Phenolic acids and Flavonoids in Grains

Yang Qiu¹ and Trust Beta^{1,2}

¹ *University of Manitoba, Department of Food Science, Winnipeg, Manitoba, Canada R3T 2N2*

² *University of Manitoba, Richardson Centre for Functional Foods & Nutraceuticals, Winnipeg, Manitoba, Canada R3T 6C5*

9:30 - 9:50

Advantages in forensic analysis of drugs and metabolites: The high sensitivity porous sprayer (HSPS)

John C. Hudson, Beckman Coulter Incorporated, Brea, CA, USA

10:00 - 10:20

Coffee and Donuts in the Exhibit Area

Room – Embassy C
Session Chair - Andrew Minkevich

10:30 - 10:50

An insight education seminar and exposition from Mettler Toledo

Hubert Caniglia, Weighing and Electrochemistry Specialist, Mettler Toledo

11:00 - 11:20

Pipette academy

Mark Ratos, Sales Manager Central/Western Canada and Upstate New York, Biohit Inc.

Room – Embassy D
Session Chair - Nubia Viafara

10:30 - 10:50

Ionic liquid-based dispersive liquid-phase microextraction

Dr. Ghodratollah Absalan¹, Morteza Akhond¹, Leila Sheikhan¹ and Douglas Goltz²

¹ *Department of Chemistry, College of Sciences, Shiraz University, Shiraz, 71454, Iran*

² *Centre for Scientific and Curatorial Analysis of Painting Elements (C-SCAPE), Department of Chemistry, University of Winnipeg, Manitoba, Canada, R3B 2E9*

11:00 - 11:20

An introduction to the retention of polar analytes by hydrophilic interaction chromatography (HILIC)

Dr. Christine Hand, Field Chemistry Specialist Ontario and Western Canada, Waters Limited

Room – Embassy E
Session Chair - Greg Sliva

10:30 - 10:50

Analysis of pesticides and mycotoxins in fruit, vegetable and grain products by LC/MS/MS

Dr. Rebecca Wittrig, Food and Environmental Specialist, AB SCIEX

11:00 - 11:20

A routine and sensitive method for the determination of aflatoxins (B1, B2, G1, G2) in food matrices using triple quadrupole LC/MS/MS
Dawn Stickle Agilent Technologies, Andover, MA, USA

Technical Program Afternoon Sessions

11:30 - 1:00

Buffet Luncheon in the Centennial Room

Keynote Speaker:

Dr. Al Kristofferson, Managing Director, Lake Winnipeg Research Consortium Inc.

Sampling-based research on the effects of nutrients on Lake Winnipeg

Room – Embassy B

Session Chair - Cameron Lyttle

1:45 - 2:05

Investigating degradation products of historically important dyes using capillary electrophoresis

*Shokoufeh Ahmadi^{1,2}, Dr. Douglas Craig¹,
Dr. Ghodratollah Absalan³ and Dr. Douglas Goltz^{1,2}*

¹ Centre for Scientific and Curatorial Analysis of Painting Elements (C-SCAPE), Department of Chemistry, University of Winnipeg, Manitoba, Canada, R3B 2E9

² Department of Chemistry, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2

³ Department of Chemistry, College of Sciences, Shiraz University, Shiraz, 71454, Iran

2:15 - 2:35

Using lateral flow devices for quantitative and semi-quantitative analysis of mycotoxins and GMOs

Steve Nenonen, Area Sales Manager, Romer Labs Inc., Union, MO, USA

Room – Embassy C

Session Chair - Debbie Salazar

1:45 - 2:05

Label-free protein interaction analysis

Francyne Horvat, Senior Administrative, GE Healthcare Bio-Sciences

2:15 - 2:35

Analytical aspects of determining emissions of gaseous organics from point sources

Dr. Dinko Tuhtar, P. Eng., C. Chem., Director, BOMA Environmental and Safety Inc

Room – Embassy D

Session Chair - Shirley Lowe

1:45 to 2:05

Spectroscopic Solutions to help your laboratory achieve its Goal

Nav Mangat, Molecular Spectroscopy Sales Consultant, Scientific Instruments, Thermo Fisher Scientific

2:15 to 2:35

Critical design specification to consider in selecting a portable Raman system for sample identification or verification in pharmaceutical and healthcare QC/QA environments

Olivier Savard, Perkin Elmer

Room – Embassy E

1:30 - 3:00

MS User's group Workshop – Sample preparation for LC/MS

Facilitator – Dr. Cecilia Basic

All are welcome to attend. Ask your LC/MS sample preparation questions to a panel of expert users and application specialists from the industry. The panel will consist of:

Julie Marr – Agilent Technologies

Christine Hand – Waters Limited

John Hudson - Beckman

Kick Van Lunenberg - Canada Life Science

Steve Hassan - ThermoFisher Scientific

2:45 - 3:00

Coffee in Exhibit Area

3:00 - 3:30

Mid-Canada AOAC Annual General Meeting in Room Embassy E

3:30

Door Prizes and grand prize draw in the Exhibit area.

You must be present to win. Mid-Canada AOAC Executive not eligible to win Grand Prizes.

Abstract

Keynote Speaker

Centennial Room

Keynote Speaker: Dr. Al Kristofferson

Sampling-based research on the effects of nutrients on Lake Winnipeg

Lake Winnipeg is the 10th largest freshwater lake (by surface area) in the world, yet it is one of the least studied. It supports a commercial fishery that employs over 800 fishers and has an annual landed value of close to 30 million dollars. It plays a vital role in the lives of the many First Nations people who live along its shores, and its recreational value exceeds 100 million dollars annually. It is also the third largest reservoir for hydroelectric power development in the world. Operated by Manitoba Hydro, it generates between \$350 and \$580 million dollars annually in export power sales. Its drainage basin is massive, stretching for almost 1 million square kilometres, and within it live over 6.6 million people. It encompasses 4 Canadian provinces and 4 US states. Yet it is not without its problems.

In the late 1960's mercury levels in some species of fish in the lake were found to exceed levels considered safe for human consumption. Major sources of mercury were coming from pulp and paper mills upstream on the Winnipeg River system and a chlor-alkali plant on the Saskatchewan River. As a result, the lake was closed to commercial fishing for a year and a half. Those sources of mercury contamination have since been cleaned up and mercury is no longer a problem in the fish. However, another problem has arisen, making its presence known during the last two decades. The problem is cultural eutrophication, or nutrient enrichment, caused by human activity within its drainage basin. Visible evidence of this is the formation of massive algae blooms which now appear consistently each summer in the north basin. This presentation will describe the formation of the Lake Winnipeg Research Consortium Inc. and explain its role in facilitating the much-needed multidisciplinary research on the lake that is so necessary to deal with this problem and to prevent other problems from developing in the future. The nature of cultural eutrophication will be discussed, and some of the results of the research and monitoring programs currently underway will be presented. It will conclude with a summary of what needs to be done and what is presently being done to deal with this very serious problem.

About Dr. Kristofferson:

Al Kristofferson was born and raised in Gimli, Manitoba and educated at the University of Manitoba (Ph.D.). He has had a close association with Lake Winnipeg all his life. His great-grandfather and grandfather were both commercial fishermen on the lake and he has a number of relatives who are still in the industry today. As a child he spent his summers swimming and angling in the lake and has been a recreational sailor on Lake Winnipeg since 1972. In the early 1970's he worked for the Provincial Fisheries Department and completed his Masters Degree on the population structuring of lake whitefish in Lake Winnipeg. He joined Canada's Department of Fisheries and Oceans in 1977 as a Fishery Management Biologist, working mainly on fisheries for Arctic char across the Canadian Arctic. He retired in October 2007 after 30 years of service. Al has a life-long love for Lake Winnipeg and is a founding member of the Lake Winnipeg Research Consortium Inc. He has coordinated its development since 1998. Presently, he is its Managing Director and plans to continue his involvement well into retirement.

Abstracts

Technical Presentations

Room - Embassy B
Afternoon Session Chair - Cameron Lyttle

1:45 to 2:05

Investigating degradation products of historically important dyes using capillary electrophoresis

Presenters - Shokoufeh Ahmadi^{1,2}, Dr. Douglas Craig¹, Dr. Ghodratollah Absalan³ and Dr. Douglas Goltz^{1,2}

¹ Centre for Scientific and Curatorial Analysis of Painting Elements (C-SCAPE), Department of Chemistry, University of Winnipeg, Manitoba, Canada, R3B 2E9

² Department of Chemistry, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2

³ Department of Chemistry, College of Sciences, Shiraz University, Shiraz, 71454, Iran

The objective of this research was to examine the feasibility of using capillary electrophoresis laser-induced fluorescence for separating and identifying a number of historically important dyes as well as their degradation products. The laser used in this study was a 407 nm solid state (diode) laser with a maximum output of 10 mW.

2:15 to 2:35

Using lateral flow devices for quantitative and semi-quantitative analysis of mycotoxins and GMOs

Presenter - Steve Nenonen, Area Sales Manager, Romer Labs Inc., Union, MO, USA

Lateral flow devices are often used for rapid, qualitative testing for the presence of mycotoxins or GMOs in grains. The tests may be based on the sandwich ELISA or competitive ELISA principles, depending on the analytes of interest. In these tests, the presence or absence of a visual marker on the device is used to indicate the presence or absence of a toxin or GMO trait in the sample. The visual marker can also vary in intensity with varied concentrations of analyte in the sample. This variation in intensity of the visual marker, in conjunction with a strip reader measuring the reflectance or optical density of the line, may be used to quantitatively or semiquantitatively measure the toxin or trait in a sample. The use of digital imaging software with the reader allows for rapid, objective methods with results independent of the individual user and permanent digital records of the strip results.

Room - Embassy C

Morning Session Chair – Andrew Minkevich
Afternoon Session Chair – Debbie Salazar

9:00 to 9:20

NHPD GMP/ Site Licensing

Presenter - Doreen Steen, MA, BCT, RAC

9:30 to 9:50

The benefits (advantages) of laboratory accreditation

C. Charles Brimley, MSc, Bed, ASCT, CEO, Canadian Association of Laboratory Accreditation Inc. (CALA)

- What does accreditation really mean?
- What are the benefits (advantages): Recognition of testing competence, a marketing advantage, etc.
- Why Use an Accredited Laboratory? Minimize risk, avoid expensive re-testing, etc.
- Laboratory Accreditation versus ISO 9001 Certification.
- About CALA / Our role in accreditation.

10:30 to 10:50

An insight education seminar and exposition from Mettler Toledo

Presenter - Hubert Caniglia, Weighing and Electrochemistry Specialist, Mettler Toledo

Learn the Good Weighing Practice (GWP) approach to selection, use, calibration, and ongoing management of balances for your laboratory.

11:00 to 11:20

Pipette academy

Presenter - Mark Ratos, Sales Manager Central/Western Canada and Upstate New York, Biohit Inc.

Pipette Academy and what you will learn:

- Be guided through the essentials of laboratory ergonomics
- Gain a better understanding of the ergonomic risk in the laboratory environment and liquid handling in particular
- How to avoid these risks
- How you can contribute to savings in both direct and indirect costs related to bad ergonomics
- How to avoid strain injuries and make work more comfortable

Abstracts

Technical Presentations

Room - Embassy C (continued)

Morning Session Chair – Andrew Minkevich
Afternoon Session Chair – Debbie Salazar

1:45 to 2:05

Label-free protein interaction analysis

Presenter - Francyne Horvat, Senior Administrative, GE Healthcare Bio-Sciences

Label-free protein interaction analysis has become increasingly important for scientists in the academic, pharmaceutical, biotechnology and diagnostic markets. Biacore and MicroCal systems enable label-free interaction analysis, generating unique data on the interactions between proteins and other biomolecules, including peptides, nucleic acids, carbohydrates, lipids, and small molecule drug candidates. Biacore and MicroCal systems are used in pharmaceutical drug discovery, antibody characterization, proteomics, immunogenicity, biotherapeutic development and manufacture, and many life science research applications. Biacore systems enable elucidation of the speed (kinetics) and strength (affinity) of protein interactions. MicroCal systems enable elucidation of the energetics and affinity of protein interactions. The comprehensive characterization of protein interactions that these systems provide add valuable insight into protein functionality and disease mechanisms, and plays key roles in the critical decisions needed for efficient development of drug candidates, as well as in basic research.

2:15 to 2:35

Analytical aspects of determining emissions of gaseous organics from point sources

Presenter - Dr. Dinko Tuhtar, P. Eng., C. Chem., Director, BOMA Environmental and Safety Inc.

Knowledge of emissions of gaseous organic compounds into the ambient air is important because of their effect on the environment and human health. Analytical aspects of Canadian regulatory methods for measurements of emissions of gaseous organic compounds from point sources are reviewed and discussed.

Room - Embassy D

Morning Session Chair - Nubia Viafara
Afternoon Session Chair - Shirley Lowe

9:00 to 9:20

An introduction to supercritical fluid chromatography (SFC). A faster, safer, greener way to perform both chiral and achiral chromatography.

Presenter - David Loveland, Senior Account Representative, Waters Limited

The introduction to supercritical fluid technologies covers the fundamentals of supercritical fluids, typical Supercritical Fluid Chromatography (SFC) hardware, and detection choices. The presentation will include example applications, for both chiral and achiral separations, highlighting the superior resolving power of SFC for structurally related compounds and cost saving information.

About the presenter - David Loveland is a Waters' Senior Account Representative for Ontario, Manitoba and Saskatchewan and is responsible for helping provide solutions in the areas of Liquid Chromatography instrumentation and chemistries, Mass Spectrometry, Laboratory Informatics and now, Supercritical Fluid Chromatography. David received his BSc from the University of Toronto and has had the pleasure of working at Waters customers since 1996.

9:30 to 9:50

Membrane fouling reduction in an electrically enhanced MBR system

Presenter - Victor Wei, PhD candidate, Manager, Environmental Engineering Laboratory, Civil Engineering Department, University of Manitoba

A novel electrically enhanced membrane bioreactor (EMBR) was developed and operated for four months. The transmembrane pressure (TMP) increased much slower than that in the control system after about one week, indicating significant membrane fouling reduction effect due to application of the direct current. In addition, it demonstrated superior removal efficiencies for typical pollutants in water and wastewater such as COD (>95%), phosphorus (>90%), ammonium-nitrogen (>99%) and total solids (>99.5).

Abstracts

Technical Presentations

10:30 to 10:50

Ionic liquid-based dispersive liquid-phase microextraction

Presenters - Dr. Ghodratollah Absalan¹, Morteza Akhond¹, Leila Sheikhan¹ and Douglas Goltz²

¹ Department of Chemistry, College of Sciences, Shiraz University, Shiraz, 71454, Iran

² Centre for Scientific and Curatorial Analysis of Painting Elements (C-SCAPE), Department of Chemistry, University of Winnipeg, Manitoba, Canada, R3B 2E9

Microextraction and preconcentration of selected compounds by using ionic liquid-based dispersive liquid phase microextraction (IL-DLPM) method is reported. To improve extraction efficiency, different experimental factors, such as volume of ionic liquid phase, pH and volume of aqueous solution, cooling and centrifugation periods, and dissolving temperature were investigated.

11:00 to 11:20

An introduction to the retention of polar analytes by hydrophilic interaction chromatography (HILIC)

Presenter - Dr. Christine Hand, Field Chemistry Specialist Ontario and Western Canada, Waters Limited

About the presenter - Dr. Christine Hand is Waters' Field Chemistry Specialist for Ontario and Western Canada and is responsible for our chemistry products including our columns and sample preparation materials. Christine received her BSc from the University of Toronto and her PhD in Chemistry from the University of Waterloo. Before joining Waters, Christine completed a Visiting Fellowship at the National Research Council's Institute of Biological Sciences. Christine is available to assist our customers with product selection, method development and troubleshooting of their applications.

1:45 to 2:05

Spectroscopic Solutions to help your laboratory achieve its Goal

Presenter - Nav Mangat, Molecular Spectroscopy Sales Consultant, Scientific Instruments, Thermo Fisher Scientific

Fourier transform infrared (FT-IR) spectroscopy represents a useful tool for material verification and identification. From raw materials ID to root cause analysis, from quality control to high throughput screening, Thermo Fisher Scientific offer solutions in the widest range of rugged, high performance instruments for drug discovery, routine analysis, PAT and preclinical development: FT-IR, Raman, and Near-Infrared for all of your laboratory needs.

About the presenter - Nav Mangat has been in the Healthcare Sales Marketplace for over 12 years out west. With experience and expertise in Life Science/ Biotech, Medical Devices and Diagnostics he has built a very extensive network of good customer contacts over the last 12 years.

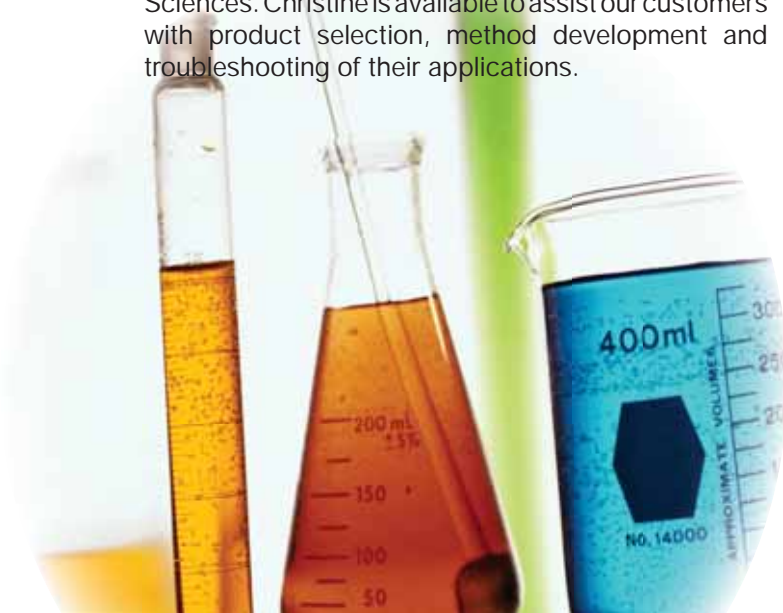
2:15 to 2:35

Critical design specification to consider in selecting a portable Raman system for sample identification or verification in pharmaceutical and healthcare QC/QA environments

Presenter - Olivier Savard, Perkin Elmer

There is an increased interest in the use of Raman spectroscopy for material identification and characterization within the pharmaceutical and healthcare industries. The convenience of sampling and high specificity of the data produced makes it an ideal tool for the rapid and unambiguous identification of pharmaceutical materials either in the laboratory or in the warehouse. Samples that can be analyzed range from solids, powders, liquids, gels, slurries and aqueous solutions to polymeric packaging materials. These can be incoming raw materials, process intermediates or final products. This talk will describe how to select a portable Raman system for the best analytical results.

About the presenter - Olivier received his M.Sc. from Simon Fraser University (Burnaby, BC) in 2006 in the field of polymer chemistry after completing his B.Sc. in chemistry at Université Laval (Québec City). He then worked for Angstrom Power (fuel cell company), as a research scientist, before joining PerkinElmer Canada in June 2007 as a product specialist for the material characterization product line. In that role, his assignment is to provide guidance, technical support and training to PerkinElmer customers, sales team, and service engineers in the related fields of molecular spectroscopy and thermal analysis throughout Canada.



Abstracts

Technical Presentations

Room – Embassy E
Morning Session Chair – Greg Sliva

9:00 to 9:20

Application of Mass Spectrometry for Identification of Phenolic acids and Flavonoids in Grains

Presenter - Yang Qiu¹ and Trust Beta^{1,2}

¹ *University of Manitoba, Department of Food Science, Winnipeg, Manitoba, Canada R3T 2N2*

² *University of Manitoba, Richardson Centre for Functional Foods & Nutraceuticals, Winnipeg, Manitoba, Canada R3T 6C5*

Phenolic acids and flavonoids are major phenolic compounds in cereal grains and have been suggested as health promoting components due to their antioxidant activities. High performance liquid chromatography (HPLC) coupled to diode array detection (DAD) are usually used in the analysis of monomeric phenolic acids and flavonoid aglycone. However, this method is not able to analyze phenolic acid dehydromers and flavonoid glycosides. Mass spectrometry (MS) which gives access to the molecular weight and specific fragments allows determination of these structurally complicated compounds. It is a powerful technique in the structural identification of bioactive compounds in grains.

9:30 to 9:50

Advantages in forensic analysis of drugs and metabolites: The high sensitivity porous sprayer (HSPS)

Presenter - John C. Hudson, Beckman Coulter Incorporated, Brea, CA, USA

Forensic analysis of charged molecules such as drugs and their metabolites is best accomplished by Capillary Electrophoresis-Mass Spectrometry (CE-MS). Capillary Electrophoresis (CE) provides the resolution, reproducibility and precision for identification of these compounds from extracts of blood and urine. The combination of CE with Mass Spectrometry then gives the necessary unequivocal confirmation necessary for the presentation of such evidence in legal proceedings. Sheathless interfacing increases sensitivity by an order of magnitude or more while maintaining the high resolution capability provided by capillary electrophoresis. The High Sensitivity Porous Sprayer (HSPS) interface for CE-MS has shown great promise in maintaining this resolution and providing the sensitivity necessary for demanding areas of forensic drug analysis. Examples of the application of the HSPS to routine forensic analysis of drugs and metabolites will be presented. The HSPS interface is for Laboratory Use Only; not for use in diagnostic procedures.

10:30 to 10:50

Analysis of pesticides and mycotoxins in fruit, vegetable and grain products by LC/MS/MS

Presenter - Dr. Rebecca Wittrig, Food and Environmental Specialist, AB SCIEX

Pesticides and mycotoxins are known to harm the health of humans and animals. Many of these compounds are carcinogenic, cytotoxic, and/or ecotoxic. Therefore, different countries have set regulations on pesticide and mycotoxin levels in food products. This is a significant challenge, as more than 1000 pesticides are used worldwide and, along with their metabolites and degradation products, are present in food and the environment. Thus, there is a need for powerful and rapid analytical methods that can detect very low concentrations of pesticides and mycotoxins in a variety of sample matrices. Regulations on food and environmental analysis require the analysis of contaminants using confirmatory techniques, such as GC/MS and LC/MS/MS. Recently, LC/MS/MS has replaced traditional GC and LC methods for the screening of pesticides and mycotoxins because of its ability to analyze a wider range of compounds in a single analysis, and the unmatched selectivity and sensitivity of Multiple Reaction Monitoring (MRM). Data quality can be further improved through the use of the Scheduled Multiple Reaction Monitoring (Scheduled MRM™) algorithm. In this study, the pesticide residue levels for a variety of fruit, vegetable and grain-based samples were determined using LC/MS/MS. Extractions were performed using both conventional and modified QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) approaches. Mycotoxin residues in grain-based products were also determined using LC/MS/MS.

About the presenter - Dr. Rebecca Wittrig currently serves as the Food & Environmental Specialist for North America. Before joining AB SCIEX, she was the HPLC Product Specialist at Restek Corporation. She has almost 20 years of experience in HPLC and GC including method development in the areas of food & food safety, environmental contaminants, and forensic toxicology. Prior to Restek, Dr. Rebecca Wittrig supervised the chromatography laboratories at The Pillsbury Company and Ecolab, Inc., both in St. Paul, Minnesota. Dr. Rebecca Wittrig has a Ph.D. in Analytical Chemistry from Purdue University and a B.A. in Chemistry from Gustavus Adolphus College (St. Peter, Minnesota). She received an MBA from Purdue University in 2009.

Abstracts

Technical Presentations

11:00 to 11:20

A routine and sensitive method for the determination of aflatoxins (B1, B2, G1, G2) in food matrices using triple quadrupole LC/MS/MS

Presenters - Dawn Stickle, Agilent Technologies, Andover, MA, USA

Aflatoxins are a group of mycotoxins produced as metabolites mainly by the fungi *Aspergillus flavus* and *Aspergillus parasiticus*. These mycotoxins can be found in common food sources such as grains, nuts and spices and are extremely toxic. Exposure can cause cancer in humans and livestock and they have been classified as human liver carcinogens by both the World Health Organization and the U.S. Environmental Protection Agency. In order to safeguard our food supply against aflatoxin exposure, reliable and sensitive analytical methods are required.

Sample pre-treatment methods such as liquid-liquid extraction and solid-phase extraction have been routinely used with chromatographic methods such as thin-layer chromatography, liquid chromatography (LC) and gas chromatography. Liquid chromatography with mass spectrometric (MS) detection is an attractive technique because it has the advantage of providing quantitative analysis at trace levels in complex matrices. In this work, a multi-aflatoxin method has been developed on a LC/MS triple quadrupole for several food matrices. This method was found to be both quantitative and sensitive.

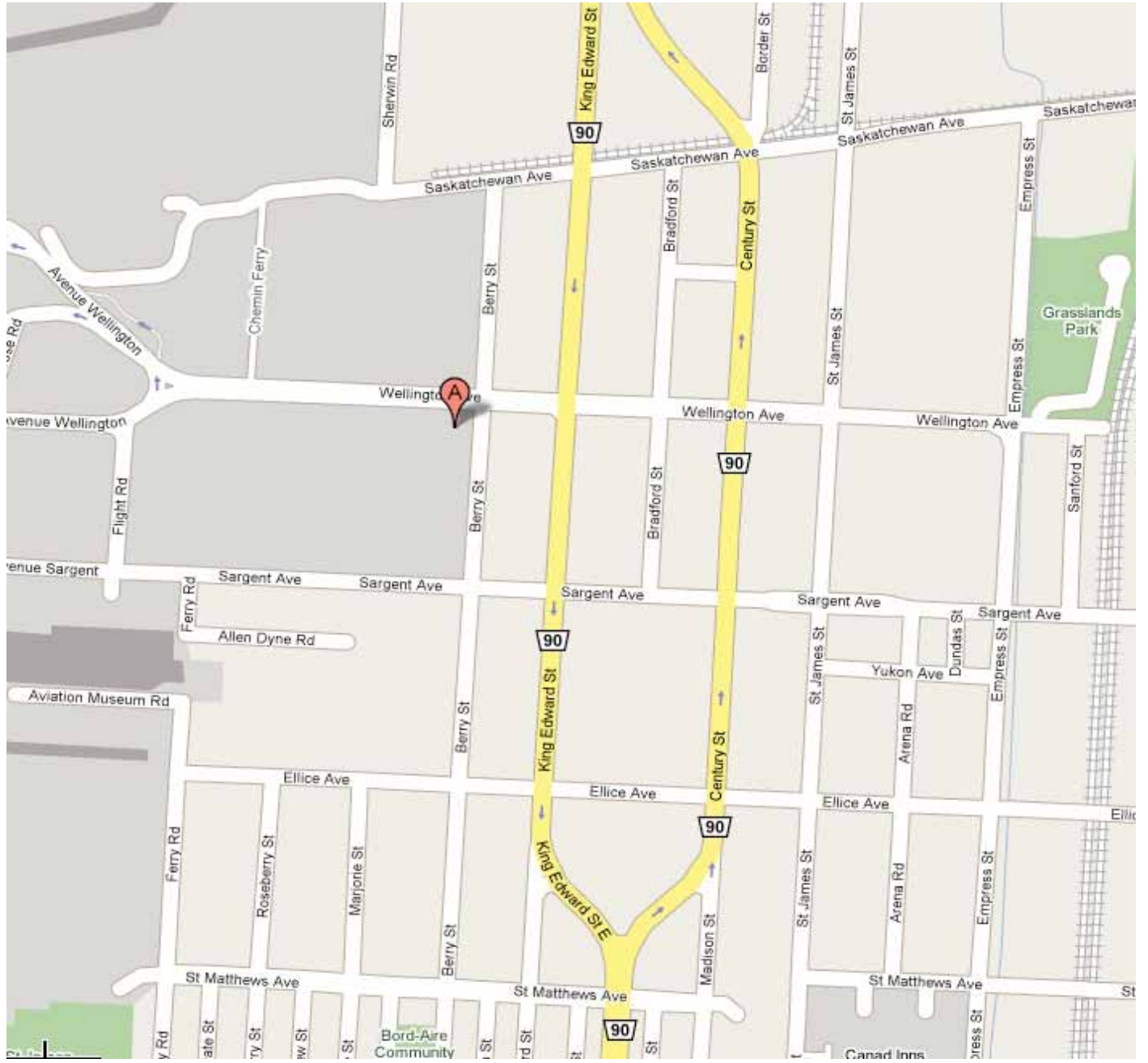
About the presenter - Dawn Stickle is a LC-MS applications scientist performing pre and post sales activities in the Northeast US and Canada. Prior to joining Agilent, she worked as an analytical chemist in the pharmaceutical industry at both Vertex Pharmaceuticals in Cambridge, MA and Concert Pharmaceuticals in Lexington, MA. In her roles, she was responsible for analytical method development and impurity identification for starting materials, intermediates and active pharmaceutical ingredients for drug substance research and development.

Prior to her experience in the pharmaceutical industry, she studied Analytical Chemistry at the University of North Carolina in Chapel Hill under the direction of Professor James Jorgenson where she completed her Ph.D. Her research involved designing instrumentation to analyze the structure of packed beds in capillary LC columns.



Location

Victoria Inn Hotel and Convention Centre 1808 Wellington Avenue, Winnipeg, Manitoba



For more information on Upcoming events, remember to check the
Mid-Canada AOAC Website at: <http://www.midcanadaoac.org>