Workshop 1: Developing an oral fluid drug testing program – Basic considerations, guidelines, and implementation strategies

Date: Tuesday, September 15, 2020
Time: 9:00 am -1:00 pm PDT
Cost:

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Chairs
Nathalie A. Desrosiers
Team Leader, Toxicology Services
Royal Canadian Mounted Police
Nathalie.desrosiers@rcmp-grc.gc.ca

Amanda L.A. Mohr, MS
Associate Director of Research
Center for Forensic Science Research and Education
mandi.mohr@cfsre.org

Abstract
Oral fluid drug testing has continued to increase in prevalence and gain acceptance as specimen suitable for forensic use. With the rapid developments in oral fluid drug testing there is a need to provide updated information related to the availability of oral fluid screening devices and products for oral fluid specimen collection. Further, there is a need to provide practitioners with information related to how to evaluate oral fluid drug testing devices, standards and performance criteria as well as a means for implementing oral fluid pilot studies. In addition to forensic use, oral fluid has recently become an accepted specimen for workplace drug testing in the United States. The details of the standards, technical requirements for oral fluid drug testing and cutoff concentrations recently released by the Substance Abuse and Mental Health Services Administration (SAMHSA) will be discussed to provide practitioners with an understanding of the guidelines associated with oral fluid testing in the workplace.

Learning Objectives
1. Become familiar with the various oral fluid screening devices and collection devices.
2. Be able to assess oral fluid drug testing with respect to current literature, advantages, and limitations in driving under the influence of drugs (DUID) and workplace drug testing.
3. Be able to evaluate laboratory-based assessments and current standards for using oral fluid screening devices in DUID cases as well as developing a pilot oral fluid testing programs.

Faculty
Nathalie Desrosiers  
Team Leader, Toxicology Services  
Royal Canadian Mounted Police

Amanda Mohr  
Associate Director of Research  
Center for Forensic Science Research and Education

Karen Woodall  
Assistant Professor, Forensic Toxicology  
University of Toronto Mississauga

Ruth Winecker  
Director, Quality Assurance and Proficiency Program  
RTI International

Nicholas Fillinger  
Toxicology Technical Leader  
Michigan State Police

**Audience Knowledge Level**

Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

**Workshop Agenda**

9:00-9:05 am: Welcome and Introduction  
Amanda Mohr, Nathalie Desrosiers

9:05-9:30 am: Review of Available Oral Fluid Screening and Collection Devices  
Nathalie Desrosiers

9:30-9:50 am: Laboratory-Based Assessment of Oral Fluid Device Performance  
Amanda Mohr

9:50-10:05 am: Break

10:05-10:35 am: Oral Fluid Drug Testing in Canada  
Karen Woodall

Ruth Winecker

11:15-11:30 am: Break

11:30-12:30 pm: Pilot Studies and Oral Fluid Testing Program Implementation  
Nicholas Fillinger

12:30-1:00 pm: Panel Discussion
Workshop 2: Cannabis Impaired Driving: Where are we in 2020?
Date: Tuesday, September 22, 2020
Time: 7:00 am -3:00 pm PDT
Cost:

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Chairs
Rebecca L. Hartman
Chief Toxicologist
Monroe County Medical Examiner’s Office
rebeccahartman@monroecounty.gov

Nathalie A. Desrosiers
Team Leader, Toxicology Services
Royal Canadian Mounted Police
Nathalie.desrosiers@rcmp-grc.gc.ca

Abstract
(SOFT Drugs and Driving Committee sponsored workshop) Over the last decade, our understanding of cannabinoids has been revolutionized as patterns of use have changed in the modern era of decriminalization and legalization. Concentrations once thought to indicate recent use and impairment may now cause unease in toxicologists interpreting them. This workshop aims to present the newest cannabis impaired driving data from around the world. Leading researchers will present their latest findings to assist toxicologists in answering some of the most difficult questions related to cannabis-impaired driving. What impact does cannabis have on driving? What is the impact of THC content on impairment? What is the impact of tolerance on the degree of impairment? What is the effect of cannabidiol on driving? What can you say about post-mortem cannabinoid concentrations? Should we be concerned about other THC isomers? Attendees should leave this workshop confidently knowing how to address these questions.

Learning Objectives
1. After attending this workshop, participants will be familiarized with the newest data related to cannabis-impaired driving.
2. After attending this workshop, participants will better understand the impact of cannabidiol (CBD) on THC and driving impairment.
3. After attending this workshop, participants will understand the limitations associated with interpreting cannabinoids in impaired driving cases.
Faculty
Johannes Ramaekers
Professor of Psychopharmacology and Behavioral Toxicology
Maastricht University

Thomas Marcotte
Professor of Psychiatry
University of California, San Diego Center for Medicinal Cannabis Research

Marilyn Huestis
Professor
The Lambert Center for the Study of Medicinal Cannabis and Hemp

Thomas Arkell
PhD Candidate, Lambert Initiative for Cannabinoid Therapeutics
The University of Sydney

Lindsay Arnold
Researcher, Traffic Research Group
AAA Foundation for Traffic Safety

Robert Fitzgerald
Professor of Chemistry and Toxicology
University of California, San Diego Center for Medicinal Cannabis Research

Dan Isenschmid
Forensic Toxicologist
NMS Labs

Aya Chan-Hosokawa
Forensic Toxicologist
NMS Labs

Megan Grabenauer
Research Chemist
RTI International Center for Forensic Sciences

Ryan Vandrey
Professor, Behavioral Pharmacology Research Unit
Johns Hopkins University

Audience Knowledge Level
Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter.

Workshop Agenda
7:00-7:05 am: Welcome and Introduction
Rebecca Hartman, Nathalie Desrosiers
7:05-7:45 am: Cannabis and Driving: Current Issues and Future Perspectives
Jan Ramaekers

7:45-8:00 am: Break

8:00-8:40 am: Detection of Acute Cannabis Use and its Effects on Driving Performance
Thomas Marcotte
8:40-9:20 am: Cannabinoids Effects on Human Performance Impairment and the Best DRE Parameters for Efficient Identification
Marilyn Huestis

9:20-9:50 am: Break

9:50-10:30 am: Effects of Cannabis, with and without Cannabidiol, on Driving and Cognition
Thomas Arkell
10:30-10:55 am: Cannabis and Driving: Brain Activity and Cognition of Recreational and Daily Cannabis Users
Jan Ramaekers

10:55-11:15 am: Break

11:15-11:40 am: Effects of Edible and Vaporized Cannabis on Human Performance
Ryan Vandrey
11:40 am-12:15 pm: Cannabis Use Among Drivers in Fatal Crashes in Washington State Before and After Legalization
Lindsay Arnold

12:15-12:45 pm: Break

12:45-1:25 pm: Recent Markers of Cannabis Use Relative to Driving Performance
Robert Fitzgerald
1:25-1:50 pm: Post-mortem THC Redistribution: Can we interpret post-mortem THC?
Dan Isenschmid
1:50-2:10 pm: The Emergence of Delta-8-Tetrahydrocannabinol
Aya Chan-Hosokawa

2:10-2:30 pm: Break

2:30-3:00 pm: Panel Discussion/Q&A
Workshop 3: GC-MS and LC-MS/MS Method Development - A Step by Step Guide

Date: Thursday, September 24, 2020
Time: 7:00 am – 3:00 pm PDT
Cost:

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Chairs
Stephanie J. Marin
Senior Applications Chemist
Biotage
stephanie.marin@biotage.com

Jeremy P. Smith
Applications Chemist
Biotage
jeremy.smith@biotage.com

Abstract
GC-MS and LC-MS/MS method development can be challenging. Where do I start? Which instrument platform should I choose? What about chromatography columns? How should I clean up my sample prior to analysis? What do I do when I get less than optimum results?

The overall method development process should yield a selective, sensitive, rugged, and robust method for quantitation of desired analytes with minimal interferences and matrix effects. This workshop will provide training beginning with method development considerations and sample preparation options. Next, principles of GC-MS and LC-MS/MS and selection of chromatography columns and conditions for both platforms will be discussed, focusing on how to make choices for a selected group of compounds. After learning about the tools at our disposal and how to troubleshoot instrument and method performance issues, we will put it all together with real world method development narratives for GC-MS and LC-MS/MS methods.

Learning Objectives
1. Identify sample preparation and chromatography chemistries for toxicology specimens and select the best options based on specimen type and compound properties.
2. Describe the principles of GC-MS and LC-MS/MS required for platform selection and method development to meet assay requirements.
3. Summarize the process of method development for toxicology labs from start to finish to create selective, sensitive, rugged, and robust methods.

Faculty
Beth Markello
Field Technical Support Scientist
Shimadzu Scientific

Linx Waclaski
Applications Chemist
Restek

Sarah Olive
Mass Spec Technical Support Scientist
Shimadzu Scientific

Ravali Alagandula
Applications Chemist
Restek

Larissa Karas
Chief, Supervisory Chemist, Confirmation Laboratory
Ft. Meade Forensic Toxicology Drug Testing Laboratory

Sabra Botch-Jones
Professor
Boston University School of Medicine

Audience Knowledge Level
Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

Workshop Agenda
7:00-7:15 am: Introduction
7:15-8:00 am: Method Development Considerations and Sample Preparation Options
Stephanie Marin
8:00-8:30 am: GC Column Selection and Method Development
Linx Waclaski
8:30-9:00 am: GC-MS Principles and Troubleshooting
Beth Markello
9:00-9:15 am: Q&A
9:15-9:45 am: Break
9:45-10:15 am: LC Column Selection and Method Development
Ravali Alagandula
10:15-10:45 am: LC-MS Fundamentals and Troubleshooting
Sarah Olive
10:45-11:00 am: Q&A
11:00-12:00 pm: Break
12:00-12:30 pm: Transitioning from a GC-MS Opiate Method to an LC-MS/MS Opioid Method
   Larissa Karas
12:30-1:00 pm: Development of an LC-MS/MS Method for 23 Drugs in Blood, Urine, and Oral Fluid
   Sabra Botch-Jones
1:00-1:30 pm: Q&A
1:30-2:00 pm: Break
2:00-2:30 pm: LC-MS/MS Method Development for Synthetic Benzodiazepines
   Jeremy Smith
2:30-3:00 pm: Q&A