

# 2ND IRMS WORKSHOP

20  
23

Drug Control Centre  
King's Forensics



# KING'S FORENSICS

## Anti-doping Science Drug Control Centre



Anti-doping Science houses the Drug Control Centre (DCC), providing anti-doping research.

## Digital Forensics & Cybercrime



Digital Forensics comprises the fastest growing discipline in forensic science.

## Forensic & Analytical Science



Forensic & Analytical Science supports research in crime scene analysis.

## Forensic Genetics



Forensic Genetics provides specialist forensic services in DNA analysis.

## International Forensics



International Forensics looks at evidence from international sources to support research in criminal

# 2ND IRMS WORKSHOP

## HOSTS

**Professor Kim Wolff**

Director

**Dr. Rodrigo Aguilera**

IRMS - Principle Analyst

**Dr. Osquel Barroso**

Senior Associate Director,  
WADA

## SPONSORS

**Dave Wanless**

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**Mike Seed**

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## WELCOME

The Drug Control Centre is delighted to welcome you to London for two days of engagement with the world's leaders in Ion Ratio mass spectrometry.

### IRMS Workshop 2023

The main purpose of the second WADA endorsed workshop in the Gas Chromatography-Combustion-Ion Ratio Mass Spectrometry (GC-C-IRMS) field and hosted by the Drug Control Centre in London is intended to help IRMS analysts, troubleshooting, system suitability and presentation of routine data analysis in different and complicated cases. We expect the IRMS workshop to strengthen the network between the IRMS Users across the anti-doping family by learning from the presentations about the routine data and by interacting with the WADA IRMS expert working group.

The presentations are not necessarily related to research programmes, but more from the perspective of routine analytical cases including interpretation of difficult data for suspicious, atypical and AAF cases. We also hope to share experiences about the APMU and the management of NextGen ABP ADAMS notifications or other TA requests regarding confirmations, IRMS analysis and ABP steroidal module passports.

Finally, it is our fervent wish that you all will profit immensely through interacting directly with Thermo Fisher our key sponsor for this event".

### The Drug Control Centre

The Drug Control Centre (DCC) is the only World Anti-Doping Agency (WADA) accredited laboratory in the UK and played a key role in the Anti-doping bio-analytical testing programmes for the London 2012 Olympic and Paralympic Games and the Glasgow 2014 Commonwealth Games, Cricket World Cup 2019, UEFA Euros 2020 Football Competition and Triathlon World Series 2021.

The DCC is accredited by the UK Accreditation Service (UKAS) across a range of sports, as a testing laboratory, analysing both domestic and international athletes in accordance with WADA's Prohibited List of substances.

The DCC continues to be at the forefront of advances in anti-doping science and protecting both the integrity of sport and the health of athletes. The DCC have a Home Office License to hold, supply and produce substances included in the Misuse of Drugs Act 1971.

# PROGRAMME

## Day 1

8:30–9:00	<b>Arrival Coffee</b>
9:00–9:10	Prof. Kim Wolff, MBE (Welcome & Introduction)
9:10–9:30	Dr. Rodrigo Aguilera (Advances in the IRMS & Concepts for the new IRMS Users)
9:30–10:00	Dr. Osquel Barroso (WADA IRMS technical document update and further documentation guidance)
10:00–10:30	Dr. Xavier de la Torre (Selection of ERCs and longitudinal evaluation of IRMS data)
10:30–11:00	<b>Morning Coffee Break</b>
11:00–11:30	Dr. Thomas Piper (Carbon isotope ratios of endogenous steroids found in human serum - an update)
11:30–12:00	Dr. Michael Polet (IRMS insights on EpiA-S, 6 $\alpha$ OH-ADION and 19NA cases)
12:00–12:30	Dr. Andrew Barber (Multipoint stable isotope calibration applied to GC-C-IRMS analysis of endogenous steroids)
12:30–13:30	<b>Lunch Break</b>
14:00–14:30	Dr. Corrine Buisson (IRMS management and organisation for the Olympic Games)
14:30–15:00	Dr. Sergi Coll Camenforte (APMU Notifications & IRMS Management)
15:00–15:30	<b>Afternoon Coffee Break</b>
15:30–16:00	Ingunn Hullstein (Derivatize or not, our experiences from both, - and some cases from the real IRMS life)
16:00–17:00	Discussion & Concerns (IRMS Group Panel) Moderator Dr. Rodrigo Aguilera
19:00	<b>Dinner - 10-11 Carlton House Terrace</b>

# PROGRAMME

## Day 2

8:30–9:00	<b>Arrival Coffee</b>
9:00–9:30	Dr Rodrigo Aguilera (Resume Day 1)
9:30–10:30	Maria de Castro - Thermo Fisher (Troubleshooting - Group 1)
9:30–10:30	Dr Rodrigo Aguilera (Troubleshooting - Group 2)
10:30–11:00	<b>Morning Coffee Break</b>
11:00–11:30	Maria de Castro - Thermo Fisher (Software Update)
11:30–12:30	Maria de Castro - Thermo Fisher (System Suitability)
12:30–14:00	<b>Lunch Break</b>
14:00–14:30	Dr. Vinod Nair - (Case studies of products resulting in positive IRMS findings – isotope signatures and detection windows)
14:30–15:00	Dr. Anna Jarek (IRMS analysis during the European Games 2023)
15:00–15:30	<b>Afternoon Coffee Break</b>
15:30–16:00	Dr Rodrigo Aguilera & Maria de Castro (Users Discussion)
16:00–17:00	WADA IRMS Working group panel discussion Moderator Dr. Xavier de la Torre
17:00	<b>Closing Workshop</b> (Professor Kim Wolff)

 Sponsors - Thermo-Fisher & Elementar UK LTD



# SPEAKERS

2nd IRMS  
Workshop



## Professor Kim Wolff

*Head of Drug Control Centre, Director King's Forensics, King's College London*

Kim is a senior academic at King's College London with 25 years' experience in analytical science (investigation of methadone and illicit drugs in addict populations). She was the UK Government technical expert advising on the introduction of drug-driving legislation in the UK and has recently become the Senior Accountable Individual for King's Forensics work on criminal investigations.

## Dr. Rodrigo Aguilera

*Principal Analyst, Drug Control Centre, King's College London*

Rodrigo received his doctorate in Analytical Chemistry and Physical Chemistry at the University of Claude Bernard Lyon I, France. He has been working for 25 years in the detection of anabolic steroids used by professional athletes by measuring the ratio of carbon isotopes by mass spectrometry (GC-C-IRMS) and in the proteomics field for 8 years. As Principal Analyst he has responsibility for GC technologies including IRMS.



## Dr. Osquel Barroso

*WADA Senior Associate Director Science & Medicine, Laboratories*

Osquel has worked at WADA for 16 years, first as Senior Manager Science and then as Deputy/Senior Associate Director in charge of key WADA Science laboratory and research activities, including the supervision of anti-doping laboratory accreditation and performance monitoring activities, the production of WADA laboratory normative documents, the coordination of the work of technical working groups (including the IRMS WG) and the management of some special research projects.



## Dr. Xavier de La Torre

*Deputy Director Antidoping Lab FMSI, Rome, Italy*

Xavier has been the Deputy Director of the Laboratorio Antidoping- FMSI of Rome (Italy) since 2008. He has a depth of knowledge in anti-doping joining the field in 1991, starting work in Isotope Ratio Mass Spectrometry (IRMS) in 1996. He is also a member of the World Association of Anti-Doping Scientists, a member of the WADA Laboratory Expert Advisory Group (LabEAG) and Chairman of the WADA IRMS Working Group.



## Dr. Thomas Piper

*Certifying Scientist, Institute of Biochemistry, Director of the Cologne APMU*

Thomas is a senior scientist at the Institute of Biochemistry, German Sport University Cologne with responsibility for Isotope Ratio Mass Spectrometry (IRMS). He completed his PhD Thesis at the Institute: "Investigations on the  $^{13}\text{C}/^{12}\text{C}$  and  $2\text{H}/1\text{H}$  ratios of endogenous urinary steroids" in 2009. His main research interests are isotopic ratios of endogenous steroids and investigations into the human steroid metabolism.



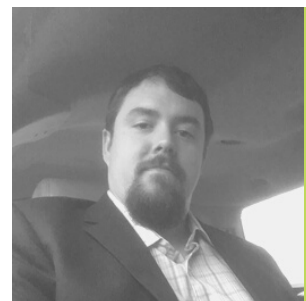
## Dr. Michael Polet

*Head of the IRMS department, Doping Control laboratory Ghent, Belgium*

Michael has worked with GC-C-IRMS for doping control analyses at DoCoLab, Ghent University, Belgium for 12 years and has been a member of the WADA IRMS Working Group since 2021. He began working with IRMS as part of his PhD focussing on the development and validation of GC-C-IRM. He is exploring the potential for the analysis of non-hydrolysed sulphated steroids on GC-MS.



### **Dr. Andrew Barber**



*IRMS Manager, INRS Armand-Frappier Health Biotechnology Centre, Canada*

Andrew received his Ph.D. in chemistry from Concordia University (Montréal, Canada) in 2017 working with Dr. Yves Gélinas. He joined the "Laboratoire de contrôle du dopage" in 2017 under Dr. Christiane Ayotte, where he currently holds the role of technical manager for the IRMS division. His work revolves around the use of analytical purification methods coupled with GC-C-IRMS in the context of sports doping control.

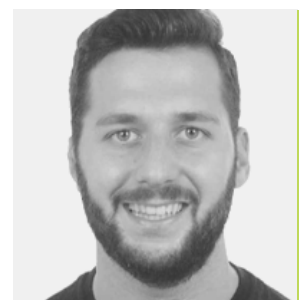
### **Dr. Corinne Buisson**



*Head of R&D and AMPU Manager (AFLD Anti-Doping Laboratory) in Paris, France*

Corinne received her doctorate in analytical chemistry at the university of Nantes, France. She has been working for 18 years in the French anti-doping laboratory, several years as IRMS manager and now as head of the analytical chemistry R&D unit and is also APMU manager since 2014 for the steroidal module of ABP. She is a member of the IRMS Working group.

### **Dr. Sergi Coll**



*Science Manager Catalonian Antidoping Laboratory, IMIM, Barcelona, Spain*

Sergi has 10 years of experience in anti-doping science. He is the manager of the APMU and research units and certifying scientist. His PhD explored glucocorticoids in sports drug testing. He also specialises in the detection of anabolic steroids and has researched confounding factors in the Steroid Profile evaluation.

### **Ingunn R. Hullstein**



*Scientific Deputy Director/ APMU Manager, Norwegian Doping Control Laboratory*

Ingunn is the Scientific Deputy Director of the Norwegian Doping Control Laboratory. She holds a Cand. Scient degree in Biochemistry and is an experienced clinical pharmacologist. She is an expert in steroid markers and has been funded by WADA to study longitudinal variation in the concentrations of steroid markers including sulphate metabolites and the impact of confounding factors on drug test results.

### **Dr. Vinod Nair**



*Associate Director, Sports Medicine Research and Testing Laboratory (SMRTL), USA*

Vinod is the Associate Director of SMRTL, a position he has held since 2009. He has 15 years of experience in anti-doping and is a member of the World Association of Anti-Doping Scientists. He has explored the challenge of distinguishing between endogenous and exogenous origins of urinary 19NA and blood profiling models as an adjunct to longitudinal urinary profiling.

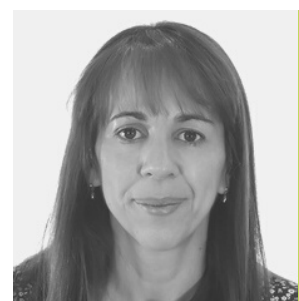
### **Dr. Anna Jarek**



*Head of the GC-MS and GC-C-IRMS division, Polish Anti-Doping Laboratory,, Poland*

Anna Jarek has been working at the Polish Anti-Doping Laboratory for 14 years, and for over 12 years she has been responsible for analyses in the field of IRMS. She has been responsible for the development of analytical procedures to quantify steroids crucial for the Athlete Biological Passport (ABP): testosterone, epitestosterone, dehydroepiandrosterone, androsterone, etiocholanolone, 5-alpha-androstandiol and 5-beta-androstandiol.

### **Maria de Castro**



*European Specialist GC-C-IRMS at Thermo Fisher Scientific, Madrid, Spain*

Maria is based in Madrid and has worked as European Service Specialist for Delta, GC-IRMS, GC-MS-IRMS, Gas Bench & EA-IRMS techniques since September 2005. She is well known in the anti-doping field and has expertise in applications of GC-C-IRMS for anti-doping purposes and provides support for troubleshooting in this domain.

# MENU

19:00 – Drinks Reception  
19:30 – Dinner to be served  
22:00 – Dinner ends

## **STARTERS**

Pressed pigeon, wild mushroom, pine seed salad, port glaze  
vinaigrette

Burrata, semi dried tomatoes, rocket salad, basil oil (V)

## **MAINS**

Aberdeen angus beef loin, grain mustard potatoes, buttered  
turnips, port jus

Wild mushroom, kale risotto, candied runner beans, shaved  
black cheddar (V)

## **PUDDING**

Tahini crème brûlée, sesame tuille, orange shortbread (V)





## **DRINKS**

### **WHITE WINE**

#### **Flor de Lisboa Branco, Portugal**

Dry white with floral on the palate and nose. herbaceous, zesty lemon and peach with bright acidity and a mouth-watering finish

### **RED WINE**

#### **Villa Rossi, Sangiovese, Rubicone, Emilia-Romagna, Italy**

Fruity, bursting with cherries, plum, but with soft tannin

### **SOFT DRINKS**



Orange Juice  
Water

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10-11 Carlton House Terrace  
St. James's, London SW1Y 5AH

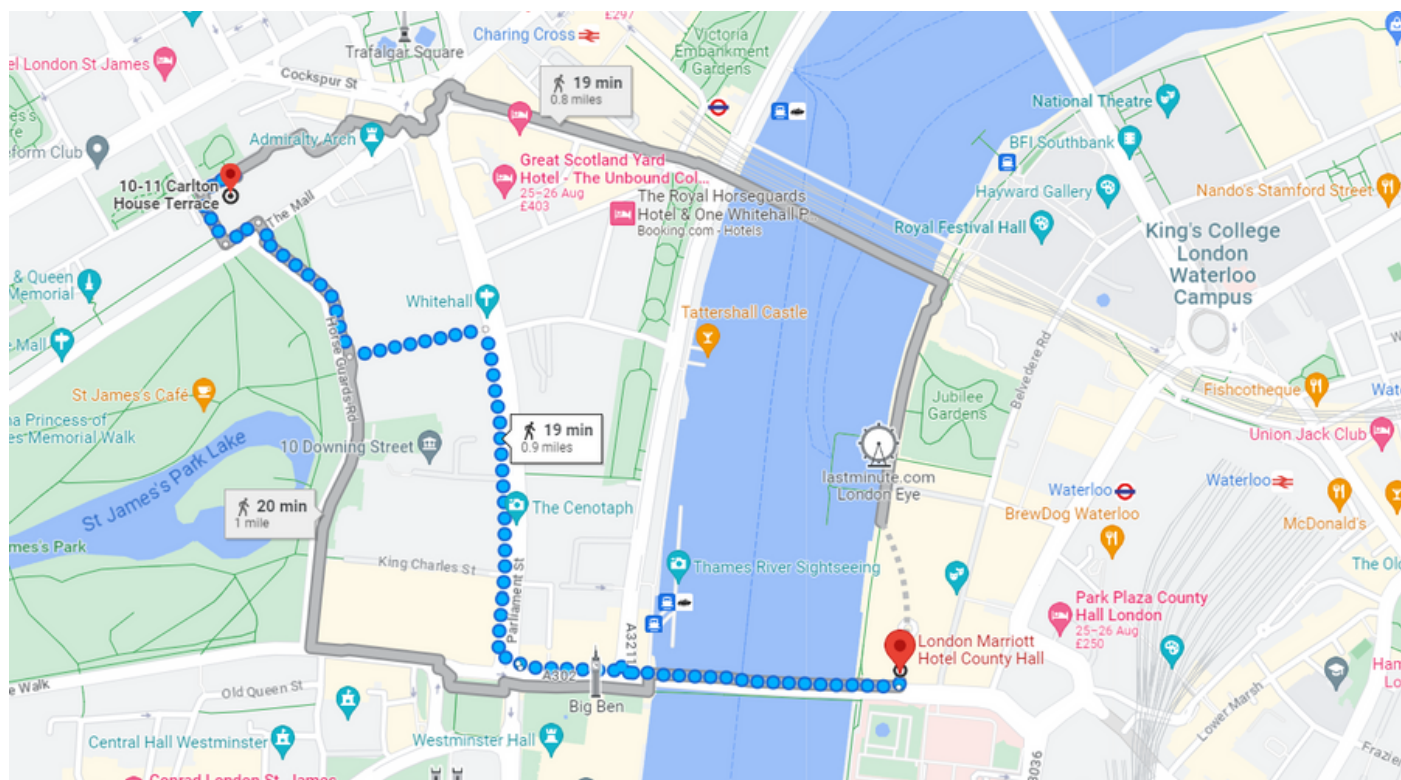
# MAP



-  IRMS WORKSHOP
-  BREAKOUT ROOM (DAY 2)

**LONDON MARRIOTT COUNTY HALL**  
COUNTY HALL, WESTMINSTER BRIDGE RD, LONDON SE1 7PB

# DIRECTIONS



## LONDON MARRIOTT COUNTY HALL - 10 - 11 CARLTON HOUSE TERRACE

- WALK SOUTH TOWARDS WESTMINSTER BRIDGE RD/A302 52 FT
- TURN RIGHT ONTO WESTMINSTER BRIDGE RD/A302 0.3 MI
- TURN RIGHT ONTO PARLIAMENT ST/A3212 52 FT
- TAKE THE ZEBRA CROSSING 0.3 MI
- TURN LEFT TOWARDS HORSE GUARDS RD 0.1 MI
- TURN RIGHT ONTO HORSE GUARDS RD 0.1 MI
- TURN LEFT ONTO THE MALL 95 FT
- TURN RIGHT TOWARDS CARLTON HOUSE TERRACE
- TAKE THE STAIRS 302 FT
- TURN RIGHT ONTO CARLTON HOUSE TERRACE

# LET'S WORK TOGETHER

## 2ND IRMS WORKSHOP

Kim.wolff@kcl.ac.uk

rodrigo.aguilera@kcl.ac.uk

<https://www.kcl.ac.uk/forensics>

020784 84848



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