

**Dr Michael Tay – Founding Partner and Senior Consultant Forensic Scientist**

Dr Michael Tay Ming Kiong is a Senior Consultant Forensic Scientist with 29 years of experience in a wide range of forensic expertise including trace evidence, damage, marks and prints, toxicology, drugs, fires and explosions, bloodstain patterns, scientific simulations, video evidence, traffic collisions and scene reconstructions.

He has worked on thousands of cases including high-profile criminal cases, and was subpoenaed to present expert testimony in over 150 Supreme and State Court trials. He was involved in high-profile criminal and civil cases such as: PP v Constance Chee, PP v Aguilar Guen Garlejo, PP v Khor Kok Soon, Quek Kwee Kee Victoria (executrix of the estate of Quek Kiat Siong, deceased) v AIA Co Ltd.

He joined the Department of Scientific Services in 1989 as a forensic scientist, working in the Narcotics II Lab, Toxicology Lab and Poisons Information Centre before joining Criminalistics Laboratory (now known as Forensic Chemistry & Physics Lab). In 1993, Michael was tasked to revamp and revitalise the service scope, instrumental capabilities, methods, technical procedures, staff development and research of the Criminalistics Laboratory. This rebuilding and redevelopment of lab capabilities and culture took several years. Significant progress was achieved in the development of capabilities in trace evidence (fibres, paints, glass, GSR, explosives, unknown chemicals, arson) and physical examinations. Michael served as Head, Criminalistics Lab (1996-2008) and Director, Forensic Science Division (2003-2010), before becoming Senior Consultant Forensic Scientist in 2009 and Director of Professional and Technical Education, Applied Sciences Group in 2010.

Michael was appointed a certified ASCLD/LAB Quality Assessor in 2001, and was part of international teams auditing government forensic laboratories in Hong Kong, Malaysia and San Francisco, USA. He served concurrently as Quality Manager for HSA's forensic laboratories from January 2009 to October 2012, spearheading the labs' transition from ASCLD/LAB-Legacy to International accreditation. HSA labs achieved this gold standard in June 2012, with their best ever external audit performance since 1996. Michael established and developed the Quality Assurance & Standards Committee (QASC) in the Asian Forensic Sciences Network, helming it from October 2008 to September 2013.

In 2007, he pioneered the development of traffic accident reconstruction (TAR) capabilities in HSA, customising methods to the Singapore context, and has since reported on many TAR cases. Shortly after the Little India Riot in 2013, TFEG was appointed by Singapore Police Force as independent experts to perform forensic video examination and reconstruct the bus accident which triggered Singapore's worst riot in over 40 years. On behalf of TFEG, Dr Tay presented the findings at the inquiry.

Michael has lectured on many law enforcement training courses, and provided in-house training and moot court training to FCPL and other forensic staff. He was Adjunct Associate Professor, School of Physical and Mathematical Sciences, Nanyang Technological University from 2009 till 2016, delivering lectures on the latest forensic developments and innovative approaches to solving crimes. He served as Adjunct Professor in the Chemistry Department, National University of Singapore from 2008 to 2014, during which time, he played a key role in setting up the Advanced Forensic Science module (CM3301), and creating and delivering course materials for the Introduction, Forensic Ethics and Glass modules. He has also been invited as consultant and speaker by overseas forensic agencies (e.g. Qatar, Thailand, Korea) and has conducted specialised in-house and moot court training for HSA staff as well as co-authored/presented over 100 scientific papers in forensic conferences and journals. In 2017, he co-authored a book "Forensic Science – Briefs for the Legal Practitioner" with the other senior partners in TFEG.

**Lim Chin Chin – Founding Partner and Senior Consultant Forensic Scientist**

Ms. Lim Chin Chin is a Senior Consultant Forensic Scientist with more than 22 years of experience, working across a wide range of forensic disciplines including trace evidence, damage, toolmarks, firearms, questioned documents, unknown chemicals/materials, drugs, fires & explosions, video evidence, traffic collisions, bloodstain patterns, scientific simulations and reconstructions.

In her 18 years as a forensic scientist with the Health Sciences Authority, Singapore, Chin Chin took on many leadership roles. She was appointed Deputy Head of the Forensic Chemistry & Physics Laboratory (FCPL) in 2000, Director of FCPL in 2008, and Director of the Forensic Science Division in 2012. Since 1995, Chin Chin has reported on and technically reviewed thousands of forensic cases. She has extensive experience as an expert witness, having testified in the Singapore High Court and State Courts, overseas courts, as well as in mediation and arbitration cases. High-profile cases include the missing 8-year-old Huang Na, One-Eyed Dragon, Yishun Triple Murder, and the controversial suicides of Indonesian student David Widjaja and American researcher Shane Todd. She assisted in the successful mediation of a multi-million-dollar case involving a major fire and explosion at a chemical waste plant, and in the arbitration of a major fraud case between two local companies.

In the mid-1990s, she enhanced the methodology for the analysis of flammable liquids for fire investigation and developed a framework for the analysis of unknown chemicals and materials. In the 2000s, Dr Michael Tay and Chin Chin pioneered the development of Bloodstain Pattern Analysis and Forensic Reconstruction in Singapore. These two areas have since gained acceptance in the Singapore courts and are widely used in high-profile cases. She advanced the use of trace evidence and manufacturing marks evidence in drug trafficking cases, and applied the reconstruction framework for the first time to a major drug trafficking case to successfully form associations between persons involved in the trafficking process.

She was founding Chairperson of the Trace Evidence Work Group, Asian Forensic Sciences Network, and member of international workgroups such as Scientific Working Group for Materials, and Textile and Hair Expert Workgroup. As an expert on counterfeit drugs analysis, she represented Singapore as a member of INTERPOL's Operation Storm from 2008 to 2013. She is a member of the International Association of Identification, International Association of Bloodstain Pattern Analysts, Singapore Medical Council's Complaints Panel, Singapore Medico-Legal Society, and was appointed by the Singapore Manufacturing Federation – Standards Development Organisation as a working member to monitor the development of ISO standards for forensic science in Singapore (ISO/TC 272).

Ms Lim is widely involved in training programmes; she has given lectures to law enforcement officers, investigators, deputy public prosecutors, lawyers, personnel from banks and insurance agencies and students in the law and science faculties of local universities. She was Singapore Police Force's Resource Consultant & Associate Trainer, School of Criminal Investigation from 2010 to 2012. She was invited as a speaker at local events organised by the Singapore Law Society Pro Bono Services between 2014 to 2018 and as a guest panellist in the 'Resolving Community Disputes' State Courts' seminar in 2016. She spoke at regional events organised by the Council of International Investigators in 2015 and 2017, and at international events organised by APEC Life Science Innovation Forum, Pharmaceutical Inspection Cooperation Scheme Expert Circle, DIA China and the Institute of Medicine of the US Academy of Sciences. Between 2015 and 2017, Chin Chin was invited to speak to overseas legal practitioners and government authorities in China, India, Malaysia and Thailand. Chin Chin is active in research and believes that continuous learning and knowledge-sharing is the path forward. She has co-authored and presented more than 120 scientific papers at international conferences and local symposiums. In 2017, she co-authored a book "Forensic Science – Briefs for the Legal Practitioner" with the other senior partners in TFEG.