2019 Forensic Science Symposium

Integrating Contemporary Forensic Science Methods in the Modern Criminal Justice System

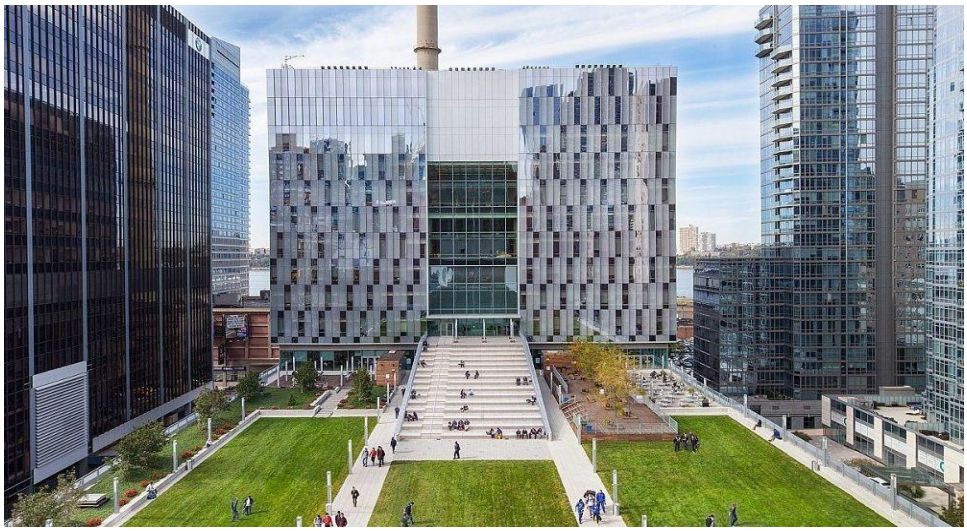
New York, New York

October 4, 2019

9:00AM – 4:30PM

Moot Court 6.68NB

(524 West 59th Street, New Building 6th Floor)



Please contact Shu-Yuan (Demi)Cheng if you have any questions. shcheng@jjay.cuny.edu; 646-557-4637

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SYMPOSIUM PROGRAM				
Time	**Program**	**Moderator**	**Speakers**	**Location**
9:00 AM – 9:30 AM	Registration Breakfast	Shu-Yuan Cheng		Moot Court
9:30 AM – 10:30 AM	Welcome Keynote Speaker	Peter Diaczuk	Sarah Chu	Moot Court
10:30 AM – 12:30 PM	Concurrent Sessions	• Mechthild Prinz • Marta Concheiro-Guisan • Peter Diaczuk	• Mechthild Prinz • Marta Concheiro-Guisan • Peter Diaczuk and John Reffner	
12:30 PM – 1:30 PM	Lunch Forensic Case Study		• Nicholas Petraco • Nicholas DK Petraco	Moot Court
1:30 PM – 3:30 PM	Concurrent Sessions (the same as the morning sessions)	• Mechthild Prinz • Marta Concheiro-Guisan • Peter Diaczuk	• Mechthild Prinz • Marta Concheiro-Guisan • Peter Diaczuk and John Reffner	
3:30 PM – 4:30 PM	Discussion/Q & A	Shu-Yuan Cheng		Moot Court

Keynote

Forensic Science as a Key Decision Point in the Criminal Justice System

Sarah Chu, MS

The depictions of the criminal justice system since the 1967 President's Crime Commission model include the roles and functions of law enforcement, prosecutions, courts, and corrections. The role of forensic science is not articulated independently in this foundational model. Instead, it has been nested among other functions in the criminal justice system. Since that time, the use of science and technology has greatly expanded, and forensic science is playing an increasingly critical role in all aspects of the criminal justice system. The 2009 National Academy of Sciences report, *Strengthening Forensic Science in the United States: A Path Forward*, articulated the need for forensic science to fully inhabit an independent scientific function without conflict and with the ability to take action. This presentation will argue that forensic science has become a decision point in the criminal justice system and the manner in which forensic science services is provided impacts criminal justice outcomes for defendants at multiple points in the system beyond the courts. For these reasons, the duty to correct and notify has become more critical to positive scientific outcomes and efforts to bypass forensic science service providers can result in serious consequences.

Concurrent Sessions

Introduction to evaluative reporting and testimony for DNA results (Speaker: Dr. Mechthild Prinz)

DNA evidence is a critical element in criminal case investigations with the majority of items tested now belonging to the category of contact traces or touch DNA with no body fluid associated. As for other physical evidence the probative value of contact traces depends on circumstances at the crime scene and the case in general, with investigators, lawyers, and juries having different perspectives on the scientific findings. Specifically, for contact traces stakeholders must consider non crime related explanations like passive transfer or persistence from earlier contact as possible alternative explanations for a DNA result. The workshop lecture will provide an update on current knowledge on transfer and persistence and address training needs and resources. The lecture will also introduce the concept of pre-case assessment and evaluative reporting based on the 2015 European Network of Forensic Science Institute (ENFSI) guidelines and recent recommendations of the International Society of Forensic Genetics (ISFG).

Forensic Toxicology (Speaker: Dr. Marta Concheiro-Guisan)

Forensic toxicology is an evolving science dealing with the qualitative and quantitative analysis of drugs and metabolites in biological specimens, and the consequent application of the methodology and interpretation of the analytical results to an episode of impairment, intoxication or death. This session will give an overview of the different types of biological samples (blood, urine, hair, oral fluid) submitted to the Toxicology laboratory and their interpretative value (how long is the drug detected, therapeutic vs. overdose concentrations). The session will cover as well a brief introduction and explanation of the workflow in the Toxicology laboratory and the techniques employed for qualitative and quantitative analysis, with special focus on immunoassays and chromatography-mass spectrometry instrumentation.

Criminalistics (Speaker: Dr. Peter Diaczuk and Dr. John Reffner)

A crime scene is a recording medium of the interactions that took place surrounding the event in question. These interactions are often the result of human initiated events. Scientific expertise is mandatory in decoding and interpreting the complex physical evidence record. There is no standard “menu” on how to address the complexity of a crime scene. This challenging endeavor presents non-routine problems that need to be recognized and interpreted by the scientist at the scene and later by the scientist in the laboratory. Trace evidence problems may present themselves in many different forms; in this Symposium, we will use fiber evidence and firearm evidence as just two examples of trace evidence in criminalistics.

Forensic Case Study

The Mystery of the Lost World Trade Center 9/11 Flag a Trace Evidence Case for the Ages.

Nicholas Petraco, MS, D-ABC, Nicholas D.K. Petraco, PhD

The flag raised by 3 NYC firefighters at the WTC "Ground Zero" site was discovered missing. The discovery was made when the flag was returned to its original owners. They immediately started an investigation which ended after a local national TV show aired the story of the missing 9/11 flag in October, 2014. A few days later, a flag was turned into a fire house in Everett City, WA, by an unknown man. The local police started an investigation during which they were only able to determine that the questioned flag could be the original 9/11 flag. Nine months after they sent photos and dust samples taken from the questioned flag to John Jay College where research on the ground zero dust was originally conducted and published. Forensic scientists at John Jay carried out an examination on the questioned specimens, comparing them to their extensive collection of known dust samples obtained at "Ground Zero," on 9/11. After comparing the dust from the flag to the known specimens from "Ground Zero" they were able to conclude to a high degree of probability that the questioned flag was indeed the original lost 9/11 flag.

Bio of Speakers

Sarah Chu, MS; Senior Advisor on Forensic Science Policy, Innocence Project

Since 2008, Sarah led policy work focused on the valid, reliable, and just application of forensic science. She holds bachelor degrees in Biochemistry/Cell Biology and Communication, and a Masters in Biology from UC San Diego. She also holds a Masters in Epidemiology from Stanford University.

Mechthild Prinz, PhD is a forensic geneticist and associate professor at John Jay College of Criminal Justice. She has more than 25 years of casework experience in forensic DNA typing and is the current Vice President of the International Society of Forensic Genetics.

Marta Concheiro-Guisan, PhD is assistant professor of Toxicology at John Jay College of Criminal Justice. She obtained her PhD from the University of Santiago de Compostela (Spain), and her postdoctoral education at the National Institute on Drug Abuse (NIDA). She has more than 80 publications in peer-reviewed toxicology and chemistry journals.

Diaczuk received his BS and MS in forensic science from John Jay College, and his Ph.D. in criminal justice with concentration in forensic science from the CUNY Graduate Center. He is past president of the Northeastern Association of Forensic Scientists and of the New York Mocroscopical Society.

Professor Reffner's scientific interests are uniting microscopy with spectroscopy and their forensic science applications. Dr. Reffner's awards are; ASTEEs' Edmond Locard, SAS's Gold Medal, AAFS's, P.L. Kirk, NYMS's, Abbe, Coblentz Society's Williams-Wright, and ISMS's, Emile M. Chamot Award. He authored 80 papers, four book chapters, and is an inventor on ten patents. He served as a consultant to the CTSP for 25 years.

Mr. Petraco served in the NYPD as a detective/criminalist in the NYPD police laboratory. After retiring he started Petraco Forensic Consulting. Mr. Petraco is an adjunct assistant professor at John Jay College where he has been teaching forensic science since 1980.

Dr. Nick Petraco's current research interests are in the application of advanced microscopy and statistical pattern recognition methods to physical evidence, tool marks and trace evidence in particular. He belongs to the American Academy of Forensic Sciences (AAFS), AAFS Academy Standards Board (ASB) consensus body for Firearms and Toolmarks and the NIST OSAC for Forensic Science-subcommittee for Firearms and Toolmark Analysis and Institute of Electrical and Electronics Engineers (IEEE).