Wednesday, May 13 - Friday, May 15, 2015
Crowne Plaza Houston in the Texas Medical Center®
8686 Kirby Dr., Houston, TX 77054

You have a crime, evidence, an eye-witness and a report from the Institute’s crime lab. How do you put the pieces together to solve the case? The 2015 Topics In Forensic Science conference will provide 2½ days of advanced and intensive education essential to death and crime investigations in Harris County.

Topics Include Presentations On:

- Death Investigations
- Interpreting Forensic Reports
- Cognitive Bias

See pages 2 and 3 for a complete list and description of presentations.

Continuing Education Credits:

- **13 CLE**: This activity has been approved for 13.0 hours of MCLE credit.
- **13 ABMDI**: This activity has been approved for 13.0 hours of ABMDI continuing education credit.
- **13 CME**: The Harris County Institute of Forensic Sciences is accredited by the Texas Medical Association to provide continuing medical education for physicians. The institute designates this <Live> for a maximum of <13.0> AMA PRA Category 1.0 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.
- **TCOLE Eligible**: To receive TCOLE training credit, attendees must submit a request to their agency’s training coordinator within 30 days following this conference in accordance with Texas Administrative Code Chapter 218.

*Featuring Dan Simon*

author of

*In Doubt: The Psychology of the Criminal Justice Process*

**$85 REGISTRATION**

Employees of HCIFS, HCSO, HCDAO
Use code Pd at registration

Registration closes Friday, April 30, 2015

Learn more and register at:
harriscountytx.gov/ifs/tifsc.aspx
Presentation Topics:
Day 1: Crime Laboratory Topics

Evidence: The heart of your investigation
Ana Torres, B.S., Forensic Evidence Technician
A review of common errors and optimal practices for preparing and submitting evidence to the Institute. Forensic evidence frequently plays a critical role in a criminal investigation. To avoid effective challenge at trial, it must be properly documented at every step and protected from loss, contamination or deleterious change.

DNA Reports: Deciphering the code
Katie Welch, M.S., Forensic Genetics Laboratory Director
A step-by-step review of the Institute’s “batch” DNA testing process including each analyst’s role and the benefits of this approach. Components of the DNA report will be explained as well as the DNA statistics that give weight to the results. Examples of the remarkable successes of the Institute’s specialized Trace DNA Collection Team will also be presented.

Trace Evidence: Traces that solve crimes
William M. Davis, Ph.D., Physical Evidence Director
A critical look at the capabilities of the Institute’s Trace Evidence Laboratory, scientifically sound interpretations of the findings contained in their reports and conclusions drawn from the analysis of Trace Evidence. Conference participants will learn about the state-of-the-art tools used by Trace Evidence analysts to detect trace amounts of ammunition primer, such as Gunshot Residue (or GSR), found on hands and other surfaces that may link an individual or an object to a shooting. Other specialized instrumentation used to search for accelerants in debris from suspicious fires will also be presented.

Measurement Uncertainty: Quantities with quality
Michal L. Pierce, M.S., Quality Director
An overview of the role of the Quality Management Division in meeting accreditation standards for the Institute with a focus on new accreditation standards requiring measurement traceability and measurement uncertainty reporting for certain laboratories. Included in the presentation, will be a description of these new elements, explanation for how they are reported, and discussion of the benefits.

What’s Your Firearms Lab Report Packin”?
Robert Baldwin, B.D., J.D., Firearms Laboratory Manager
We will “unpack” the firearms lab report to take a close look at associations, eliminations and inconclusive findings. Can there be value in an inconclusive finding? When no firearm is recovered can the lab assist an investigator or prosecutor? If the firearms lab report includes a list of possible firearms manufacturers, how is that information useful? What should an investigator do if a gun believed to have been used isn’t on the manufacturers’ list? These and other questions from the firearms laboratory report will be answered.

Clarifying the Chemistry: The Drug Chemistry Report
Kay McClain, B.S., Drug Chemistry Manager
A historic view of how laboratory reports from the analysis of seized drugs have evolved from a basic description of a drug, a drug’s name and its weight. Today’s Drug Chemistry Laboratory Report takes into account current laws, a laboratory’s testing procedures, and limitations of test systems.

Detoxifying the Toxicology Report
Jeff Walterscheid, Ph.D., Toxicology Validation/Research & Development Manager
A detailed analysis of the components of the Institute’s Toxicology Laboratory Report as well as common findings in prescription, illicit, and designer drugs in toxicology specimens. Toxicology reports have become increasingly complex in response to the prevalence of abuse, broadened availability and heightened potencies of modern drugs and alcohol. Today’s Toxicology Laboratory Report details the types of tests performed, who performed each test, and a listing of both positive and negative results. Reports also typically include the names of a number of analysts who participated in testing. This presentation will provide participants with a better understanding of who the author of the Toxicology Laboratory Report is and who should testify in court about the effects of the intoxicants.

Designer Drugs 2015: A game of Khat and mouse
Warren C. Samms, Ph.D., Toxicology & Chemistry Director
Jeff Walterscheid, Ph.D., Toxicology Validation/Research & Development Manager
An update on the current generation of designer drugs and legislative updates. Since 2010, forensic investigations in Harris County have had to consider an expansive, constantly changing array of psychoactive substances referred to as designer drugs. Initially seen in powder or plant form, these chemicals now masquerade additionally in liquid, blister paper, and tablet forms, with potentially deadly consequences of their use.

Day 2: Medical Examiner & Special Interest Topics

Trace DNA Collection: Close encounters revealed
Zury Phillips, M.S., DNA Analyst II/Trace Evidence Collection Team Lead
A look into the Trace DNA Evidence Collection Team’s case files. This specialized team is comprised of qualified DNA analysts who collect trace and DNA evidence from decedents at death scenes when close contact between a perpetrator and a victim is suspected. The team’s work will be illustrated using real case examples of how DNA recovered from decedents have aided in death investigations.
### Day 2: Medical Examiner & Special Interest Topics (CONT'D)

**Anatomy of an Autopsy Report**
Merrill O. Hines, III, M.D., Assistant Medical Examiner
Alex John, M.D., Assistant Medical Examiner

A discussion of the purpose, structure and organization, and limitations of an Autopsy Report presented in the context of various intended audiences. An Autopsy Report's various components will be presented with an emphasis on how the organization of the gross and microscopic autopsy observations reflect the interpretation of those findings and how the autopsy observations are integrated with investigative information and laboratory data in the formulation of pathologic diagnoses.

**What the Heck's Going on in Their Head??**
Glenn Sandberg, M.D., Assistant Medical Examiner

A brief overview of the neuropathology report and the important elements necessary for death investigation, with particular focus on dating injuries. These elements will be demonstrated using examples from pediatric abuse cases as well as adult traumatic and non-traumatic cases.

**Make no Bones About it: Forensic anthropology in Harris County, TX**
Christian Crowder, Ph.D., Forensic Anthropology Director

A presentation of the types of analyses performed by the Institute's Forensic Anthropology Division. Using a report as a guide, this presentation will demonstrate the standard operating procedures of the division, the types of analyses performed, interpretation of the results, and how these findings can contribute to your investigation.

**To Know a Fly: Interpreting the Forensic Entomology Report**
Michelle Sanford, Ph.D., Forensic Entomologist

Uncover the components of the forensic entomology report and learn how they relate to the information available for a case. Several example entomology cases will be presented to illustrate when insect information may be useful.

**The Role of the Forensic Emergency Management Division in HCIFS Operations**
Jason Wiersema, Ph.D., Forensic Investigations and Emergency Management Director

An illustration of the Institute’s Forensic Emergency Management Division’s proactive strategy using examples of emergency response and trainings. Participants will also learn how the division is dedicated to maintaining the preparedness, safety and security of the Institute and its personnel.

**In-Custody Deaths: Neither restrained nor biased**
Dwayne Wolf, M.D., Ph.D., Deputy Chief Medical Examiner

This presentation will explore the concept of bias as it applies to forensic pathology and medical examiner practice in general. The balance between managing potential bias and performing essential roles as a medical examiner will be explored. The medical examiner setting represents a fundamentally different landscape regarding bias than does the crime lab. Specifically, ancillary information gleaned from all potential aspects of the investigation should be available and considered in order to determine cause and manner of death. It will be argued that consideration of all available investigative information in order to determine cause and manner of death and to envision a plausible scenario does not constitute bias. These ideas will be discussed and illustrated in the context of death occurring in custody.

**Forensic Investigation of Traffic Fatalities**
Michael R. Condron, II, M.D., Assistant Medical Examiner
William M. Davis, Ph.D., Physical Evidence Director

The role of the Institute’s Trace Evidence Laboratory and forensic autopsy in investigating traffic fatalities will be presented. Techniques for collecting trace evidence at autopsy will be discussed, and autopsy procedures in traffic deaths will be reviewed as well as the efficacy of the analysis of automotive paints.

### Day 3 (half-day): Cognitive Bias

**Presented by:**

Dan Simon, author of *In Doubt: The Psychology of the Criminal Justice Process*

This 3-hour presentation will provide findings from experimental psychological research that bear on the accuracy of the criminal justice process. A central theme of the presentation is that the evidence used in criminal prosecutions is not necessarily as accurate as generally believed. The first part of the talk will look at general cognitive processes that are involved in human decision making. These processes likely play a role in decisions made by all actors in the criminal justice process, from detectives and criminalists through defense attorneys, judges and juries. The next two parts will focus on two common types of evidence: eyewitness identification and confessions. We will explore the psychological processes that underlie these types of evidence and examine the factors that impact their accuracy.

**Specific topics include:**

- Competing models of human decision making
- Automaticity and awareness of decision making processes
- Effects of context on decision making
- Fundamentals of human memory
- Memory for faces
- Witness accuracy in identifying strangers
- Do innocent people ever confess to crimes they did not commit?
- Interrogation methods
- Psychological processes involved in interrogations
- The diagnosticity of confessions