**UNDERSTANDING FORENSIC DNA ANALYSIS: A PROGRAM FOR LAWYERS AND JUDGES
TEXAS STATE CAPITOL AUDITORIUM**

DAY ONE: NOVEMBER 2, 2023

8:30 a.m.   **Registration and Logistics: Capitol Auditorium Foyer**

9:00 a.m.   **Welcome, Introduction of Crime Scene and Best Practices in Collection**
The Honorable Barbara Hervey (Court of Criminal Appeals), Lynn Garcia (Forensic Science Commission), Staff Captain Troy Wilson (Texas Rangers)

During this session, faculty will briefly review the crime scene scenario distributed before the conference and introduce a framework for attorneys and judges to approach forensic analysis within the larger context of a criminal case. Faculty will also discuss best practices in crime scene processing from the investigative perspective. The crime scene scenario involves the sexual assault and murder of a woman in her ground floor apartment. Specific facts will be distributed to attendees before the conference and used to present both scientific and legal material throughout the program. A sample DNA report will be provided with the scenario.

9:45 a.m.   **Laboratory Evidence Handling and Forensic Biology Screening**
Erika Avila (Former Texas Department of Public Safety (TXDPS) DNA Advisory Board Scientist, Laredo), Brady Mills (TXDPS Deputy Asst. Director), Ben Wolff (Office of Capital & Forensic Writs), Bill Wirskye (Collin County DA's Office)

During this interactive session, faculty will discuss best practices in evidence handling once the evidence has been received at the crime laboratory, the potential downstream impact of evidence collection and handling irregularities in a criminal case, and laboratory approaches to forensic biology screening for various types of evidence. Participants will learn about current technologies used to screen evidence for biological material before it is sent for DNA testing, and the limitations of screening technologies. Faculty will also discuss how laboratory case acceptance and testing policies may impact the way a case is assessed by criminal justice stakeholders.

10:30 a.m.   **Break**

10:45 a.m.   **Understanding DNA Extraction, Amplification and Quantitation**
Cassandra Canela (Texas Department of Public Safety DNA Advisory Board Scientist, Garland), Ariel Payan (Capital Area Private Defender Service)

When generating a DNA profile from a crime scene sample or the buccal swab of a suspect, forensic scientists first must extract the DNA from the item by separating it from other components of a human cell. Once the DNA is extracted, scientists then focus their attention on certain short segments of DNA that vary from person to person. These variations are called alleles, and they determine a person's genetic profile. To know which alleles are present from a person's buccal swab or the DNA extracted from a crime scene sample, forensic scientists must make millions of copies of the alleles using a process known as amplification. After the alleles are amplified, they are run through an instrument that sorts them like a coin counter sorts coins. Instead of ending up in coin slots, the alleles end up as peaks on a chart, which scientists refer to as an electropherogram.[1]

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[1] Credit for this explanation goes to Rich Press, National Institute of Standards and Technology, *see* DNA Mixture Explainer.

During this session, attendees will focus on issues that may arise during extraction or amplification, such as contamination. Attendees will also learn about quality assurance steps taken by laboratories to minimize potential problems. Attendees will learn how to evaluate these issues as a prosecutor, defense attorney or judge.

11:45 a.m.   **Lunch (on your own)**

1:00 p.m.   **DNA Interpretation Basics (Everything Other than Statistics)**
Garon Foster (Bexar Co. Crime Lab), Matthew Howard (Bexar Co. DA's Office)

When a forensic scientist looks at an electropherogram from one person's buccal swab taken in a controlled environment, interpreting the peaks on the chart is a straightforward task. However, when the electropherogram represents DNA from a crime scene sample where multiple different people's DNA profiles may be present, understanding what those peaks represent is more challenging. How many people may have contributed to the mixture? Is there a "major component" and what does that term mean? Did the laboratory "deduce out" the victim's known DNA profile and why does the laboratory take that step?

During this session, attendees will learn the basics of reading a DNA report other than the reported statistics. This includes understanding stochastic effects as well as the number of contributors and the critical role the analyst's assumptions regarding the number of contributors may play in the interpretation of a profile.

2:00 p.m.   **You Can Do It: Achieving a Basic Understanding of DNA Statistics**
Mike Coble (UNTHSC/CHI), Nic Hughes (Nicolas Hughes Law Firm), Bill Wirskye (Collin Co. DA's Office)

During this session, attendees will continue their review of the mock DNA report. They will develop a basic understanding of statistical reporting, from random match probability (RMP) and combined probability of inclusion/exclusion (CPI/CPE) to the current use of probabilistic genotyping software programs like STRmix that generate likelihood ratios. Faculty will discuss what a likelihood ratio is as well as common misunderstandings regarding likelihood ratios. Faculty will also highlight some unresolved and commonly litigated concerns around the use of probabilistic genotyping software.

3:00 p.m.   **Break**

3:15 p.m.   **All About Testimony Panel: Part One**
Dawn Boswell, Moderator (UNTHSC/CHI), Jarrah Kennedy (TFSC), Brent Watson (Texas DPS DNA Advisory Board Scientist, Waco), Chase Baumgartner (Innocence Project of Texas), Calli Bailey (Collin County DA's Office)

Communicating increasingly complex DNA results and statistics to laypeople within the adversarial system is one of the most challenging aspects of being a forensic scientist. How should DNA analysts simplify the information without making it so simple that it is misleading? How do laboratories ensure their analysts are providing accurate information during testimony? How do they correct mistakes when they occur? What constitutes effective and thorough trial preparation and what are the potential consequences when preparation is inadequate? Faculty will explore these questions using the case scenario as a backdrop.

4:00 p.m.   **Day One Wrap-Up**
Judge Barbara Hervey, Lynn Garcia

4:30 p.m.   **Adjourn**

9:00 a.m.	**All About Testimony Panel: Part Two**

Dawn Boswell, Moderator (UNTHSC/CHI), Jarrah Kennedy (TFSC), Brent Watson (Texas DPS DNA Advisory Board Scientist, Waco), Chase Baumgartner (Innocence Project of Texas), Calli Bailey (Collin County DA's office)

This session is a continuation of the discussion regarding communication of increasingly complex DNA results. We will focus on trending issues such as TPPR (Transfer, Persistence, Prevalence, Recovery). What can (and should) analysts say when asked questions like how did the DNA get on this evidence or when did the DNA get on this evidence? Could it have gotten there in the laundry, and other hypotheticals attorneys may ask.

9:45 a.m.	**Ethical Responsibilities: *Brady v. Maryland*, the Michael Morton Act, Lawyer Disciplinary Rules and the Scientist's Duty to Correct**

Carson Guy (Staff Attorney, CCA), Lynn Garcia (TFSC)

During this session, attendees will learn about *Brady v. Maryland*, the Michael Morton Act, and their application to forensic science issues in criminal cases. Attendees will also learn about the Forensic Science Commission's Code of Professional Responsibility, as well as the status of implementation of a new statewide crime laboratory portal authorized by the Legislature this past session (SB-991), for purposes of better effectuating the legal and ethical disclosure obligations of prosecutors in the context of forensic science.

10:45 a.m.	**Break**

11:00 a.m.	**Chapter 64 Filing/State's Response**

Bob Wicoff (Harris Co. PDO), Matthew Howard (Bexar Co. DA's Office)

Attendees will spot issues for a possible Chapter 64 filing, including what the State's response to such a filing might be. Practical tools and resources for Chapter 64 motions will be included in this session.

11:45 a.m.	**Lunch (on your own)**

1:00 p.m.	**Writs and More: A Nuts-and-Bolts Intro to Post-Conviction Habeas**

Michael Falkenberg (Harris Co. PDO), Nancy Nicolas (Travis Co. DA)

Using the crime scene scenario as a backdrop, this session will address common subjects in post-conviction habeas litigation such as ineffective assistance, prosecutorial misconduct, *Brady v. Maryland* and actual innocence claims. Faculty will discuss practical tips for filing writs (and responses) with the CCA.

2:30 p.m.	**Break**

2:45 p.m.	**DNA Technology on the Horizon**

Mike Coble (UNTHSC/CHI), Mindy Montford (Office of the Attorney General), Lieutenant Trampas Gooding (Texas Rangers)

In this session, faculty will provide an overview of emerging DNA technology such as forensic investigative genetic genealogy and its utility in the context of the crime scene scenario.

3:30 p.m.	**Q&A/Takeaways for Practicing Attorneys: A Panel Discussion**

4:00 p.m.	**Adjourn**