Forensics Tutorials Workshop
August 27 – 29, 2015

SPEAKER TITLES/ABSTRACTS

Cedric Neumann
South Dakota State University

"What is Pattern Evidence?"

This tutorial will focus on the forensic examination of pattern evidence, and on the statistical inference of the source of pattern evidence (fingerprint, shoe print, tool marks) recovered at a crime scene.

-and-

"Presenting Evidence to Be Relevant, Correct and Convincing"

Presenting evidence to jurors need to be done in a fair and balanced manner. However it has been shown that jurors are easily confused when confronted with statistical information and logical reasoning.

Herbert David Sheets
Cansius College and University at Buffalo

"Bitemark Analysis"

Forensic bitemark analysis rests on two premises, that bitemarks are unique, or individuating, and that bitemarks are recorded adequately to allow an associate of the bitemark with the related dentition.   The published research on both of these necessary conditions for bitemark analysis has been limited, and our groups work with modestly sized databases indicates that neither premise is well supported.

Cliff Spiegelman
Texas A&M University

"The Practice of Firearm/Toolmarks and a Reasonable Path Forward "

This talk will give the recent history of firearm/toolmark practice in courts. It will lay out the gist of the procedure, and point to statistical and mathematical deficits. It will then give some ways it may be improved and then discuss newer technology that we expect to be available to participants to work and experiment with.

Bill Tobin
Forensic Engineering International

"What is 'Forensic Science'? A USMC Methodology for Amplification"

Decades of Hollywood "CSI" portrayals and flawed or nonexistent designs of experiments have imbued erroneous perceptions of forensic practices in the minds of jurists, advocates, jurors, and forensic practitioners. This session will provide an overview of pragmatic insight from a mainstream scientist who became an FBI Agent investigating criminal activities in Chicago and Detroit, and who was subsequently assigned to the FBI Laboratory "in the forensic trenches" as a forensic metallurgist. The presentation will use U.S. Marine Corps drill instructor methodology to reform misperceptions and establish understanding of the realities of forensic practices, discuss how they were developed, inferential logic processes, fallacies of induction, potential biases, rates of error, and scientifically defensible inferences.

Sandy Zabell
Northwestern University

"Human Factors in Forensic Science"

Recent years have seen an increasing recognition of the role that human cognitive factors can play in forensic science. In this talk I discuss an emerging typology of such factors (such as confirmation bias, anchoring effects, and adversarial allegiance), highlighting in particular the work of Itiel Dror and his collaborators. The sequential masking technique will be described as an innovative approach that has been proposed for counteracting many of the potential distortions that human factors can introduce into forensic investigation and analysis.