E13 Idolatry of the 21st Century Forensic Sciences: Gateway of Opportunity for the Conviction of the Wrongfully Accused

Chantal Ferraro, PhD, Department of Anthropology, CW Post Campus, Long Island University, Brookeville, NY 11548; O'Brian C. Smith, MD, and Teresa A. Campbell, MD, 381 Cherry Hollow CV, Cordova, TN 38018; and Elayne J. Pope, MA, Department of Anthropology, University of Arkansas, Fayetteville, AR 72701*

Attendees will gain the ability to discriminate between effective science, erroneous science and the need to ensure criminal investigations are well coordinated and integrated.

This presentation will impact the forensic community and/or humanity by demonstrating higher quality investigations, recognizing inherent flaws in the system, and avoidance of wrongful prosecutions.

The *Frye* test and now the *Daubert* standards are evolving tools designed to ensure the sciences and attendant expert opinions presented in court are truthful, accurate, accepted by the scientific community and are stated by persons who are themselves sufficiently qualified to truly know what they are testifying about. Despite the evidentiary requirements, each case is initially an isolated event before a judge who stands as the sole gatekeeper to scientific testimony and unless some issue is addressed at an appellate level, inappro- priate evidence may be admitted with devastating effects.

The risk of admitting erroneous science has many sources, human, cultural and systemic. The various etiologies reflect the systemic inability of a diverse scientific and medical community to adhere to accepted guidelines and protocols, to monitor themselves, correct the misinformed and the inexperienced apply sanctions to the charlatans and those with agendas or lacking objectivity. Cultural practices affect investigative techniques: do scientists correlate laboratory findings with the crime scene to account for changes in specimens occurring between the crime and the analysis? Did the testifying scientist perform the procedure or are they depending upon the work of another? Do agency rivalries or rifts exist because of differ- ences in culture or competencies? Human factors also abound, how thor- oughly do investigators communicate? Are members of a multi-agency "task force" sufficiently familiar with each other to use communication tools (statements vs. summaries) in common? This unseen environment is permissive; prosecutors are susceptible to using errors of science because they work with whatever they have been handed. After all, not being sci- entists and expecting *Daubert* to be followed innately may produce a mindset where the possibility of being misled accidentally, much less delib- erately never occurs to the attorneys involved. Anxious, since forensic science crime shows became so popular, for the most scientific support of their argument, the opportunity exists for attractive yet erroneous science to enter the courtroom. Under the current rules of evidence it becomes the burden of the defense to either challenge everything under *Daubert*, com- promise or fail to challenge because the discovery "looks OK" or seek to identify potential discrepancies in the science. This latter is often difficult since the worksheets capable of revealing this are not readily discoverable.

Sources of error with some examples for presentation:

- Disjointed investigation: communication problems among investigators arising from using the "task force" concept. Incomplete turnover of information, personal and agency mindset, rotation of personnel, "do loops" [old wrong information circulates about and returns as "new" information and is still wrong].
- Opinions formed from a distance: use of suboptimal technology failure to ask questions and gain essential details. Lack of proximity to situation results in limited communication, investigators and attorneys know only others decide to share.
- Opinion as fact: "trust me I'm a doctor."
- Loss of objectivity: sentimentalism destroys emotional balance, as seen with child cases, sexual assault.
- Science removed from reality: building foundation of proof from one fact, an inverted pyramid of logic (Descartes, 1596-1650).
- Violation: failure to obtain peer review.
- Infraction: failure to follow established agency guidelines for establishing new procedures.
- Bias: identification with government, wants to be a "team player."
- Misinformed: reliance upon an incomplete fact basis.
- Dogma: reliance upon tradition, "father to son" science as in exploding heads.
- Myth: hypothesis appealing to emotionality as in rule-of-three theory in child deaths.
- Absence of scientific method: intuitive reasoning, not deductive, rejection of coincidence.
- Idolatry: new "sciences" profilers, cadaver/anthrax dogs, facial recognition.
- Subjective validation: belief beyond accepted norms currently accepted in court, polygraph.
- Cultural prejudice: ritual (satanic) abuse of children in daycare facilities.
- Inappropriate expertise: over-reaching from one discipline to another.

 ** Presenting Author*

- Ignorant: flat out don't know what they are talking about.
- False Authority: documented expertise in one area is not conferred with administrative authority over other areas.
- Misplaced confidence: assumptions that scientific guidelines have been followed.
- Charlatan: junk science and pseudo-science.

The above lists some of the "cracks" that are currently open for anyone prone to making assumptions is likely to enter. If one is to be as proud of science in the 21st century as in 20th, then advances need to be lauded with the ability to guarantee its quality matches its utility.

Jurisprudence, *Daubert*, Forensic Science

 ** Presenting Author*