



Criminalistics Section – 2006

B145 Taking Stock of the Forensic Sciences: Need for a System-Wide Perspective

Joseph L. Peterson, DCrim*, Sam Houston State University, College of Criminal Justice, Box 2296, Huntsville, TX 77341-2296

The goal of this presentation is to assist forensic practitioners to appreciate the scientific, organizational, budgetary, legal, and professional considerations that affect the quality and effectiveness of science provided to the criminal justice system.

This presentation will impact the forensic community and/or humanity by assisting attendees to approach their forensic practice with awareness of the many nonscientific factors in the criminal justice system that influence the quality and effectiveness of work.

Although advances in the forensic sciences in recent years have dramatically expanded their potential for assisting the criminal justice system in identifying humans and materials, reconstructing crimes, and associating or disassociating persons with their victims and scenes of crimes, serious challenges and pitfalls threaten this potential. While some of these problems are scientific in nature, many more issues reside outside the profession and in the domains of the police, the courts, the media, and the public. This paper is based on numerous research studies and inquiries the author has made over the past several years. Most forensic crime labs have been positioned within police agencies for decades that have not always provided adequate budgetary and scientific support. The courts are beginning to call for proof of the reliability of forensic methods, the press has exposed questionable and unprofessional practices, and the public is demanding the field meet a higher standard of service. Unless the forensic sciences begin to address these problems with enthusiasm and a measure of urgency, the field's tremendous potential will be frustrated. The three primary sections of this presentation will address 1) key conditions within forensic sciences profession, 2) the influence that law enforcement has on the field of forensic science, and 3) important legal issues the courts/judicial system must address.

Forensic Science Profession – The profession, itself, must actively support programs that upgrade the quality of science being practiced. Efforts are needed to improve the quality of forensic science education programs offered and technical training delivered both to entry level and experienced professionals. Budgetary and resource deficiencies severely limit the quality and timeliness of services offered and these limitations must be addressed. Professional standards (certification, accreditation, proficiency testing, robust methods) must be embraced and should be made mandatory. Research addressing the empirical foundation of the pattern evidence professions (handwriting, firearms and toolmarks, latent fingerprint identification, and others) must be pursued with vigor.

Law Enforcement – Many of the most serious problems affecting the forensic sciences have their origin with the fact that most laboratories are located within police organizations. Police agencies have failed to provide laboratories with adequate financial resources to handle casework, resulting in too few scientific personnel and large case backlogs. The recent study *Census of Forensic Crime Laboratories 2002* found that more than 500,000 requests were backlogged. By their own report, laboratories need upwards of \$500 million of new funds to add personnel, and expand and upgrade facilities to respond to this backlog. Equally serious, investigations launched by journalists and defense investigators reveal shoddy work practiced in some laboratories, unqualified personnel practicing their craft, and a laboratory atmosphere that does not promote the unbiased examination and interpretation of the evidence. Many criminal justice and legal panels are recommending the field give serious consideration to alternative organizational arrangements to insure forensic practitioners have independence and are free from organizational bias and related pressures.

Courts/Legal Standards - While DNA has become the new "gold standard" of forensic science practice, the U.S. Supreme Court, through the Daubert decision and its progeny, has raised the bar governing the admissibility of scientific techniques. Courts are demanding methods are peer reviewed, forensic examiners follow the scientific method, and demonstrate the reliability of their techniques through documented error rates. Better-trained prosecutors, defense counsel and judges will challenge future forensic scientists to insure they meet proscribed standards. The fallibility of many types of evidence in death penalty cases has led the courts to review the reliability of all evidence – including scientific. Criminal justice professionals and lay users of forensic science are becoming more knowledgeable about the scientific strengths and limitations of particular forensic evidence. While this places more pressure on forensic examiners, it will also stimulate the field to make needed changes.

The impact of forensic science is becoming more and more dependent upon the actions of nonscientific, criminal justice professionals and lay users of laboratory results. The costs and benefits of the various alternatives mentioned will be discussed.

Standards, Resources, Justice System