A68 Does Non-DNA Evidence Still Have a Role in Criminal Investigations?

Vincent J. Desiderio, MS, New Jersey State Police Office of Forensic Sciences, NJSP Central Laboratory, 1200 Negron Road, Hamilton, NJ 08691*

After attending this presentation, attendees will have a greater appreciation for the role of non-DNA evidence in criminal investigations.

This presentation will impact the forensic community by increasing the community's awareness of the relevance of non-DNA evidence. This presentation is intended to redirect the focus away from DNA-only investigations back towards a collaborative approach to scientific investigations.

Forensic science is a broad term that encompasses numerous discreet fields. The primary goal of these collective fields is to provide information so that proper investigations into criminal and/or civil matters can be conducted. Forensic science is unique amongst the various investigative fields primarily due to the fact that it uses the scientific method to elicit facts from physical evidence. By using the scientific method, a logical approach can be utilized to develop theories on how things may have occurred and/or why things may appear as they are. As in any other scientific field, the theories that are presented in forensic science are only theories and therefore must withstand scrutiny and challenges that can, and will, occur. Only by withstanding such challenges can a theory gain strength and general acceptance.

Forensic biology, more commonly known as DNA analysis, is just one discipline amongst the forensic collective. The products of the scientific method, as applied to DNA analysis, can not only be utilized to provide identifications of individuals, they can also be used to link suspects to scenes, victims to suspects, and crimes to one another. There is no question that DNA has revolutionized the analysis and comparison of physical evidence. It is a powerful tool in the forensic repertoire that has certainly impacted innumerable cases and the lives of countless individuals. It is, however, only one of the many scientific tools that are available to assist with criminal investigations.

The meteoric rise of DNA analysis, along with its vast string of successes, has fostered a new attitude whereby investigators and attorneys alike are taking the stance that if you do not have DNA evidence, you do not have a case. The corollary of this sentiment, which is equally as dangerous, appears to be taking hold as well; whereby it is not uncommon for investigators to concentrate on and collect only biological evidence while large amounts of other types of physical evidence goes overlooked. These attitudes, bolstered by a recent spate of articles in the peripheral literature, have placed an over reliance on DNA that has cast dubious shadows on traditional areas of forensic analysis including but not limited to fingerprints, firearms, toolmarks, and trace evidence. A fissure has opened splitting DNA evidence from what has now been commonly referred to as "non-DNA evidence".

The above listed "non-DNA" fields have historical roots and have been the proverbial bread and butter of the forensic sciences for a relatively long time. These fields produce somewhat subjective results that require a great deal of experience to interpret. Due to this reliance on experience, in combination with established methods for quantifying DNA results, there is an unfair perception that the results obtained from fingerprints, firearms, toolmarks, and trace evidence are unreliable. Based on such unfortunate comparisons there are now various movements, both patent and latent, that are attempting to discredit these fields in their entirety. This is most unfortunate due to the fact that, as a result of such efforts, there is now an abundance of good evidence that is not being utilized.

The goal of this presentation is to address the significance of this new paradigm by setting forth and answering several questions: 1) What is the role of the scientific method in the forensic sciences? 2) What is the general basis for the fissure between DNA and non-DNA evidence? 3) What is more important in an investigation DNA evidence or non-DNA evidence? and 4) Does non-DNA evidence still have an important role in the forensic sciences?

In answering these questions, a philosophical discussion on the role of non-DNA evidence in criminal investigations, with an emphasis on the value of trace evidence, will be provided. The point of view to be presented will emphasize a collaborative approach to the scientific investigation of criminal activities whereby all relevant evidence should be evaluated and included in the theory forming process. After all, a theory is only as good as its supporting evidence. The more evidence that is taken into consideration, the better the refinement process and the stronger the theory will become. By taking such a collaborative approach to the scientific investigation of crimes and incorporating as much factual information as possible from as many disciplines as possible, a proposed theory will be much stronger and will stand up to ever greater challenges.

Non-DNA Evidence, Trace Evidence, Scientific Investigations

Copyright 2009 by the AAFS. Unless stated otherwise, noncommercial *photocopying* of editorial published in this periodical is permitted by AAFS. Permission to reprint, publish, or otherwise reproduce such material in any form other than photocopying must be obtained by AAFS. ** Presenting Author*