Identacode Summary of DNA Issues at the NCSBI Laboratory-

Fact Finding in Case Review

Forensic Science Laboratories that are willing to provide full disclosure of their DNA policies and practice are to be commended. Too often, a seemingly small omission leads to a deviation from standard accepted forensic science practice and multiple years of criminal casework are impacted by that once "innocent mistake". Patterns of poor policy and practice reflect badly on the forensic science community as a whole and DNA policy even if well-written if not abided by will result in investigation and major laboratory section overhaul. All of this can be summarized as providing effective oversight of forensic laboratory policy and practice to ensure fairness in our criminal justice system and protection of our Constitutional Rights.

Disclosure:

On review of randomly selected DNA cases from the North Carolina State Bureau of Investigation (SBI) Laboratory on defense attorney request, the following systematic errors were noted in criminal casework. Most of these errors have been addressed through the laboratory system overhaul in the years 2004-2010 but remain a concern for the forensic DNA community in general.

Quality Control Issues:

(1) Contamination that was noted in controls and evidentiary samples was in some casework "reduced" by one of two methods. Method 1 was to dilute the sample with additional buffer or water to reduce or eliminate the detection of the minor component in a sample. Method 2 was to decrease the injection time during capillary electrophoresis so as to reduce the amount of contamination that was detectable by the DNA instrumentation. This poor practice was detected due to the presence of draft reports that were maintained in casework files that stated additional bands were detected in samples that cannot be attributed to the known reference standards submitted - but in the final reports; the sentence was omitted or never reported (nondisclosure, Method 3). In all cases, this represented a situation where contamination had become prevalent and the information was not fully disclosed.

(2) DNA results or detection of a DNA profile in combination with a presumptive blood identification test was frequently taken to mean that human blood had been detected. However, due to the lack of a human blood confirmatory test, the ability to confirm human blood by accepted forensic science standards was not met. Since shed epithelial cells from touch DNA samples can be transferred easily onto evidentiary items with stains, the source of the DNA profile cannot be presumed to be associated with the stain. A mixture of cell sources or layering effect needs to be considered if confirmatory testing for body fluid identification is not performed. This represented a lack of clear understanding of the biology related to the potential type of sample being tested.

(3) Testimony regarding using microscopy as an accepted confirmatory blood identification practice for the laboratory was given in at least one case and standard presumptive and confirmatory blood identification practices were not followed even when available and used as general practice on similar criminal casework. This represented an outdated screening procedure for stains that lacked scientific credibility since more current scientific practices were already in place at the Laboratory.