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From: Jergovich, Tammy
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To: McCarriagher, Michael
Subject: FW: FBI Hair Testimony Review

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George-

Reports have been released by the news media discussing older hair examinations and testimonies given by FBI hair examiners (The Washington Post, April 18, 2015 and The Associated Press, April 21, 2015). These reports state that the FBI has acknowledged that many of their hair examiners gave flawed testimony in almost all trials where they testified. These reports encourage states whose examiners were trained by the FBI to conduct their own reviews.

The GBIDOFs currently has four examiners trained and qualified to perform hair examinations, however, they did not complete their training at the FBI laboratory. Hair examiners at the GBI complete an 11 month long in-house training program that includes proper use of examination procedures that are nationally recognized and published by the Scientific Working Group on Materials Examinations (SWGMEAT). Those procedures are currently being considered for endorsement by the Organization of Scientific Area Committees (OSAC). Hair examiners at the GBIDOFs are taught to clearly explain the scientific validity of microscopic hair comparisons as well as the limitations of the examinations during courtroom testimony.

The class association of a questioned hair via a microscopical hair comparison does not constitute absolute identity. It is possible that more than one individual can have hair that exhibits the same microscopic features and characteristics. Reports issued on the microscopical comparison of hairs by the GBI DOFS clearly indicate this in both the conclusion and results sections of the report. The following verbiage is included in GBI hair reports:

“It should be noted that microscopical hair comparisons do not constitute a basis for absolute personal identification. Additional testing of nuclear or mitochondrial DNA from the hair has the potential to eliminate (name) as a potential donor or increase the significance of the hair association based on microscopy alone.”

Microscopical hair examinations and comparisons have been performed by the GBI DOFS for several decades. These examinations involve the use of microscopes (stereo microscopes and brightfield comparison microscopes) to first characterize a hair and then perform a comparison to a known source of hair. Because the science of microscopical hair comparisons has limitations and cannot provide a positive identification of the donor of the hair (i.e. is class evidence), other steps are taken in an attempt to further exclude the subject as a potential donor of the hair when microscopically consistent hairs are found. Each hair that is found to be consistent with a particular individual and is potentially probative to the investigation is evaluated for the presence of follicular material (tissue) on the root. Since approximately 2000, hair roots with follicular material have been removed and sent on to the DOFS Biology section for nuclear DNA testing. If that is successful, the nuclear DNA profile is compared to the subject in a further attempt to show that the questioned hair originated from a different person in the class of potential donors having the same microscopic characteristics as that subject. If the DNA profile matches the subject, this is a second independent test that can be used to strengthen the significance of the hair association. If the questioned hair does not have follicular material on the root and is not suitable for nuclear DNA testing, the hair can be sent to the FBI laboratory for mitochondrial DNA (mtDNA) testing on the remaining hair shaft. This practice has been in place since approximately 2006.

News reports describing the review of testimony of FBI hair examiners in hundreds of cases indicates they overstated the significance of hair matches during their testimonies. GBIDOFs hair examiners take a conservative approach to testimony and make it very clear that a questioned hair that is microscopically consistent with a subject's known hair could either originate from that subject or from another subject(s) possessing hair with the same microscopic characteristics. There is a limited pool of donors that may have hair that is microscopically consistent with the questioned hair, however, no numerical statistics are available for how limited that potential pool of donors may be. The testimony of GBI hair examiners does not include numerical statistics concerning the significance of the microscopical association.

In order to further decrease the size of the pool of potential donors, DNA testing is performed on the hair after the microscopical examination is done and has reached its limitations. It is expected that DNA testing may further narrow the pool of potential donors and may eliminate a subject as the donor of a particular hair.

To date, the GBI has not had a case where further testing of nuclear DNA was able to eliminate a potential donor after microscopical hair examinations included that subject as potential donor. To date, of the cases sent to the FBI for mitochondrial DNA testing following a microscopical association, the additional test (mtDNA) test was able to eliminate the subject as a potential donor approximately 5% of the time and included the subject as a possible donor approximately 95% of the time.

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