

Exemplars

Opinion

The analysis of DNA evidence has come way in just the last decade. Investigators understand that developing a DNA profile from an item of crime scene evidence is just the beginning. I always teach that science does not solve crimes and only investigators can solve crimes. Say your DNA evidence gets uploaded into the CODIS databases and it comes back to a convicted offender named John Paolucci. You have a DNA hit, the holy grail of forensic evidence, but your job is far from over. Who is John Paolucci and why was his DNA in your crime scene?

It could turn out that John Paolucci is a relative or close friend of the family who served his time and is out now, regularly stopping by to enjoy the wife's cooking and hit the husband's stash of beer in the refrigerator. It could also be that John Paolucci is the plumber who was recently working on the baseboard just below the window where the perpetrator entered and the crime scene unit collected the DNA swab that produced the DNA hit. In the latter case, John Paolucci had legitimate access to the scene, but does that mean he isn't the perpetrator? Investigators have a difficult job ahead of them.

Prior to uploading DNA into the CODIS databases, CODIS managers have to make certain that attempts to obtain DNA exemplars from all persons with legitimate access to the scene for elimination purposes were made for purposes of due diligence. It is the duty of the investigating detective to make all efforts to collect DNA exemplars from persons with legitimate access - but wait! People don't want to stick swabs in their mouths and give big brother something as personal as their DNA. What if the computer comes up with that illegitimate child I may have fathered in Daytona, Florida during spring break in 2004?

It can be very difficult to put people at ease when requesting that they provide a DNA exemplar, but the investigator needs to explain how much worse things could be if the refuse. First of all, if they have legitimate access to a crime scene then there is likely a personal and/or emotional tie to the victim if they themselves are not the victim. They need to know that since they are regularly in this location they have no doubt deposited their DNA in the location. If swabs and other DNA evidence collected from the scene is analyzed, the profile developed may be their own. If they refuse to provide an exemplar then they have given the defense a significant loophole - in other words, when/if and arrest is made, there could be DNA collected at the scene that is not from the perpetrator. The investigator needs to make it very clear that if they provide an exemplar then the presence of this DNA is easily explained and is not from that phantom donor who is the real perpetrator as the defense will assert.

When the reason for not providing an exemplar is fear that they will end up in a database, then you, the investigator, have to explain to them that all probative DNA profiles developed from crime scene evidence is uploaded into the CODIS databases if they cannot be eliminated. In the event that the profile developed is

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theirs, and they are not eliminated, then they risk having their DNA uploaded into CODIS. When their DNA is submitted for elimination purposes, it remains in that particular case file and is only compared to other profiles developed in that case and NOT uploaded. Refusal to provide an exemplar could result in their DNA being uploaded in to the CODIS database which, ironically, may be the cause of their fear to begin with.

Aside from victim and elimination DNA exemplars, investigators also need to collect suspect exemplars. There are essentially three (3) types of suspect DNA exemplars:

1. Consent: The suspect agrees to provide the investigator with a sample of his/her DNA (you may suspect that this is unusual)
2. Court ordered: A judge may order the suspect to provide a DNA exemplar Abandonment (two types)
3. Covert surveillance

This type of abandonment DNA can be very challenging to obtain. The investigator must follow his subject and wait for him to abandon an item onto which the subject has deposited his DNA. This could include cigarette butts, drinking containers, eating utensils and items of this nature. The investigator MUST be certain that the item collected is in fact the item the subject discarded. In other words, if the subject discards a cigarette butt on a street corner and there are several cigarette butts on the ground when the investigator goes to collect it, then this is a "Do-over". Likewise if an item is thrown into the trash and commingles with other DNA rich items that were previously deposited in that receptacle, a mixture has occurred and efforts to collect the DNA must continue. It is recommended that you consult with your forensic biology department to learn which substrates are the most "promising" for developing a DNA profile.

A team of two investigators is recommended for the collection of an abandonment DNA exemplar. One investigator should maintain eye contact with the subject as well as the item that is abandoned to ensure that the same that was discarded is the item that will be collected. The second investigator will prepare the packaging for the sample with all the requisite markings so that

once the sample is collected and placed in the packaging there is no need to write on the packaging and risk damaging it in the process. He will also don appropriate PPE for this collection. In this manner the first investigator will be able to blend in more effectively than if he were standing on a corner wearing latex gloves and carrying packaging suitable for DNA evidence when his subject walks by!

Interview Room

When an investigator has his or her subject come in for an interview, this is a good time to get an abandonment DNA exemplar. When possible, it is highly recommended that the room be prepared for this endeavor. The trash should be lined with a new, clean trash can liner and devoid of any trash that may cause cross contamination. Once the interview begins, so does the game, depending on how astute your subject is. Some investigators like to keep the interview room warm to make a cool drink seem more attractive to the subject. Cups, bottles, cans are all good sources for DNA. When a subject leaves a cup, can or plastic bottle behind that still contains liquid the best way to prepare that item for

packaging without jeopardizing the DNA is to poke a hole in the bottom with a clean, sharp object and let the liquid drain from there rather than draining the liquid from the top or mouth which is where the DNA was deposited thereby jeopardizing dilution/contamination the sample.

Cigarettes and gum are also consumables that may appeal to your subject. With these items, it is best to toss the whole pack to your subject and have him remove the item to be consumed. When you think about removing a cigarette from a pack, you grab the filter with your fingers. Depending on what type of shedder you are, you may be creating a mixture. If the subject touches the filter of the cigarette he is going to smoke, it's all still in play. As with the drinking container, you want to have new, aluminum disposable type ash trays for the subject so that he doesn't mix his cigarette in with others where cross contamination may occur or you just might not be certain which cigarette was consumed by your subject. Don't forget to get permission from the squad commander to smoke in the interview room!