

**FILED**  
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PITTSBURGH OFFICE OF  
SUPERIOR COURT

IN THE SUPERIOR COURT OF PENNSYLVANIA



**25 WDM 2016**

MICHAEL ROBINSON, )  
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)  
Petitioner, )  
)  
vs. )  
)  
COMMOWEALTH OF PENNSYLVANIA, )  
)  
)  
Respondent. )

No.  
Allegheny County Court of  
Common Pleas Docket No.  
7777 of 2013

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**PETITION FOR REVIEW FILED BY DEFENDANT MICHAEL ROBINSON**

Petition for Review from the February 4, 2016 decision of the lower Court refusing to certify for appeal the Court's discovery Order of December 7, 2015

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**Type of Pleading:**  
Petition for Review

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**On behalf of :**  
Petitioner, Michael Robinson

March 7, 2016

IN THE SUPERIOR COURT OF PENNSYLVANIA

MICHAEL ROBINSON, )  
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 ) **Petitioner,** )  
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 ) **VS.** ) **No. \_\_\_\_\_ C.D. 2016**  
 )  
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 ) **COMMONWEALTH OF PENNSYLVANIA,** ) **Allegheny County Court of**  
 ) **Common Pleas Criminal Division**  
 ) **Docket No. 7777 of 2013.**  
 )  
 ) **Respondent.** )

**PETITION FOR REVIEW.**

A. Statement of Jurisdiction.

This Court has appellate jurisdiction over this Petition for Review pursuant to **Rule 1512(a)** of the **Pennsylvania Rules of Appellate Procedure** as well as the Official Notes to **Rules 341(c)** and **1311** pertaining to a trial Court's refusal to certify an interlocutory order for immediate appeal.

B. Party seeking review.

The party seeking review is the Defendant in the Court below, Michael Robinson.

C. The determination sought to be reviewed.

The determination sought to be reviewed is the February 4, 2016 Order of the lower Court, which denied the Petitioner's request pursuant to **Title 42 Pa. C.S.A. Section 702(B), Interlocutory Orders**, to certify the lower Court's December 7, 2015 interlocutory discovery Order for appeal. In the December 7, 2015 Order, the lower Court denied the

Petitioner/Defendant's discovery request for the computer instructions ("source code") to the computer software program invented by the Commonwealth's expert DNA witness. The computer instructions contain the process/basis by which the expert arrived at his findings, conclusions and opinions.

The February 4, 2016 Order states as follows:

"AND NOW, to-wit, this 4<sup>th</sup> day of February, 2016, this Court hereby DENIES Defendant's "Application Pursuant to Title 42 Pa.C.S.A. Section 702(B), Interlocutory Orders, for Amendment to Include Certification of the Interlocutory Discovery Order Issued on December 7, 2015."

*(See Exhibit "A", attached hereto).*

A four page opinion followed the Order. The text of the December 7, 2015 Order states as follows:

"AND NOW, to-wit, this 7<sup>th</sup> day of December , 2015, having considered testimony, exhibits, and arguments presented, this Court hereby DENIES Defendant's DISCOVERY Motion to the extent it requests production of True Allele Casework software source code."

*(See Exhibit "B").*

#### D. Background.

In this death penalty case, the Commonwealth intends to offer at trial expert DNA testimony from a company called Cybergenetics. The case involves a complex DNA mixture including 3 or more individuals DNA discovered on a bandanna. Due to the complexity of the DNA mixture, the Allegheny County Crime Lab could come to no conclusion about the identity of the contributors to the bandanna. *(See Report of the Allegheny County Crime Lab, Exhibit J, attached hereto).* An expert from a company called Cybergenetics intends to testify that his

computer software program deconvoluted (separated) the DNA of the multiple contributors in this complex mixture. Significantly, he used a computer software program which he himself invented. The expert intends to testify that Michael Robinson was one of the contributors of DNA found on the bandanna. The expert also intends to testify as to the strength of the match, stated in terms of a statistical probability, called a likelihood ratio. The expert claims that his computer program enables him to reach both opinions, i.e, the probability of a match and the strength of the match.

Petitioner's position.

Petitioner Michael Robinson is entitled under the Sixth Amendment of the United States Constitution as well as the Pennsylvania Constitution to learn the process by which the Cybergenetics' expert arrived at his opinions. The Petitioner is also entitled to learn the full, complete and entire basis of the findings, conclusions and opinions of the Cybergenetics' expert. This is fundamental. In this case, that basis is contained in the computer instructions ("source code") which told the software program what to do with the data from the Allegheny County crime lab. The computer instructions to the expert's computer software program consist of 170,000 lines of instructions. Four or five different individuals created the 170,000 lines of computer instructions which operate the software system. These instructions were created and entered into the computer by human beings. Significantly, the process and basis for how the Cybergenetics expert arrived at his findings, conclusions and opinions is not contained in his Reports. The Reports merely include a self-serving and conclusory sentence: "True Allele...objectively inferred evidence genotypes [the identity of the contributors] solely from [the Crime Lab] data". The process and basis as to how the findings were arrived at are likewise not contained in the "Case Summary Packet" provided by the Commonwealth in discovery. Nor

are they contained in the various promotional/marketing materials which have been provided by the Commonwealth. In short, the Cybergenetics expert refuses to disclose the computer instructions to his software program --despite having obtained numerous patents on his software program. This refusal deprives the Petitioner – in a death penalty case - of his right to learn, assess and challenge the basis upon which Cybergenetics arrived at its conclusions, findings and opinions. This is anathema in the criminal law. Any and every party to a case has the right, pre-trial, to acquire the complete, entire and full basis upon which the opposing party's expert arrived at his/her opinions. It is simple logic that if the Petitioner is forced to deal with or be told he has to live with a computer's findings, that he be allowed to know what the computer was told in order to reach its findings. The **Petitioner cannot cross-examine a computer**. Without production and defense review of the computer instructions, not only will the Petitioner be denied his constitutional right to a fair trial – he risks being wrongly executed.

The context in which this issue is being litigated.

It is vital to recognize the context in which this issue is being litigated. Recently, the methodologies of four of the hallmark forensic sciences used in prosecutions for decades throughout America (and the world) have been exposed and debunked as unreliable and invalid.

These methodologies are:

1. Hair analysis evidence;
2. Arson evidence;
3. Bite mark evidence; AND
4. DNA identification evidence.

Hair evidence.

The United States Justice Department and the FBI have recently acknowledged that for decades, nearly every forensic examiner in an elite FBI forensic unit gave flawed testimony in almost all trials in which they offered evidence against criminal defendants. The cases included 32 murder cases wherein human beings were sentenced to death. (*See Washington Post full article, Exhibit "C", "FBI admits flaws in hair analysis over decades", attached hereto*).

“The admissions [of the FBI and the Department of Justice] mark a watershed in one of the country’s largest forensic scandals, highlighting the failure of the nation’s courts for decades to keep bogus scientific information from juries, legal analysts said.”

United States Senator Richard Blumenthal, a former prosecutor, observed:

“These findings are appalling and chilling in their indictment of our criminal justice system, not only for potentially innocent defendants who have been wrongly imprisoned and even executed, but for prosecutors who have relied on fabricated and false evidence despite their intentions to faithfully enforce the law”.

Arson evidence.

Similarly, the Associated Press published an article last year with the conclusion that scientific arson evidence, also relied upon in criminal prosecutions for decades, has been likewise debunked:

“[This] case is one of dozens around the country to come under scrutiny because of entrenched but now-discredited beliefs about how arson can be detected...

United States Magistrate Judge Martin Carlson stated: Over the past two decades, there has been a revolution in fire science. It is a revolution that has toppled old

orthodoxies, and cast into doubt longstanding assumptions regarding fire scene analysis.... Sometimes, with the benefits of insight gained over time, we learn that what was once regarded as truth is myth, and what was once accepted as science is superstition. So it is with this case.”

*(See Associated Press article, June 23, 2014, “Judge: Bad science led to murder-by-arson verdict”, Exhibit “E”).*

Bite mark evidence.

Bite mark evidence has also been discredited. Recently in Fayette County, Pennsylvania, a third degree murder conviction was reversed because the Commonwealth expert who testified at trial in 2006 re-examined his findings and realized that the methodology he used to conclude that the bite mark matched the Defendant was flawed. The expert referred to the methodology he himself utilized in the prosecution of the defendant as “junk science”. In 2009, the National Academy of Science issued a report discrediting bite mark evidence.

*(See Associated Press article dated October 2, 2015 “Murder conviction mixed in ‘junk science’ bite mark case”, Exhibit “F”).*

DNA Identification evidence.

Expert testimony involved in DNA typing/identification evidence has also been discredited. The FBI, in May of 2015, notified crime labs across the United States that data relied upon by forensic scientists in thousands of cases was erroneous.

*(See Washington Post full article, Exhibit “G”, “FBI notifies crime labs of errors used in DNA match calculations since 1999”, attached hereto).*

Relating directly to the issue before this Court, *Slate Magazine* emphasized the dangers of both (i) errors as well as (ii) fraud in computer source codes in an article titled “Convicted by

Code” dated October 6, 2015. Slate calls for the production of computer source codes to defense experts so that defendants can have the opportunity to actually learn what the computer has been instructed to do with the data obtained from the crime lab. *(See Slate Article, Exhibit “H”).*

Finally, in “Too Much Goes Wrong With Justice”, the USA Today last week featured an op-ed piece by former Attorney General of the United States Alberto Gonzalez, who calls for reforms in forensic science in the criminal justice system in America, in light of a record 149 convicted defendants who were exonerated just last year. Gonzalez specifically pointed to flawed science as a source of wrongful convictions/miscarriages of justice. *(See USA Today, Exhibit “I”).*

Accordingly, in light of all of the above disturbing revelations and embarrassments about our criminal justice system - which span the entire spectrum of forensic science disciplines - it is incumbent upon this Court to view Cybergenetics and its refusal to produce its computer instructions with extreme skepticism. Further, it must be noted that Cybergenetics attempts to sell its software system to law enforcement agencies. The “True Allele Casework System” is a product which Cybergenetics sells. Cybergenetics is in the business of making money. Cybergenetics therefore has an inherent and obvious financial incentive to claim that it can arrive at high probabilities of a DNA match. If it cannot arrive at the high probability of a match, no law enforcement agency would be interested in purchasing it.

The FBI does not use Cybergenetics’ computer software system, nor do 246 out of the approximate 250 crime labs in the United States.

Despite an aggressive and relentless marketing campaign by Cybergenetics for at least the past 10 years, almost no crime lab in the United States has purchased nor uses Cybergenetics’ software system to deconvolute (separate) complex DNA mixtures in actual cases. Moreover, the methodology touted in the software system is not the methodology which is used or accepted in



the DNA identification industry today, in America. The selling point of the “True Allele” software system is that it considers data both above and below the thresholds which are the standard in the industry in both America and the World. The FBI and Crime Labs throughout the United States, today, consider only data which falls *below* the upper threshold and *above* the lower threshold. In stark contrast, “True Allele” considers *both* data *above* the upper threshold and *below* the lower threshold. (See Exhibit N, pages 119-120, testimony of Dr. Mark Perlin).

However, again, essentially no one uses this computer program:

1. The FBI does not use it. (See Exhibit N, page 121, lines 10-12);
2. the Allegheny County Crime Lab does not use it; (Affidavit, Exhibit “P”);
3. 246 crime labs out of the approximate 250 crime labs in the United States do not use it; (See Exhibit N, page 123, lines 17-19);
4. although the New York State Police Lab *purchased* the software 5 years ago – it has never used it in an actual case;

(See Exhibit N, testimony of Perlin in the matter of People of the State of New York, page 90, lines 20-25; page 91, lines 1-9).

E. The Petitioner’s Statement of objections to the trial judge’s determination on February 4, 2016 to not certify this issue for immediate appeal.

The lower Court refused to certify for Interlocutory Appeal its December 7, 2015 Order wherein it denied the Petitioner’s discovery request for the computer instructions to Cybergentics’ Computer Software System. For the compelling reasons set forth in detail below, this was so egregious that it justifies prerogative appellate correction of the exercise of discretion by the lower Court. The issue involves (i) a controlling issue of law (ii) about which there exists substantial ground for a difference of opinion, and (iii) appellate resolution of this issue at this

time will materially advance the resolution of the issue. The Petitioner easily satisfies all three criterion.

The lower Court's reasoning in its February 4, 2016 Opinion and Order for why it denied to certify this issue for appeal is egregious in every respect. It is also outrageous in one respect.

Although the lower Court correctly stated that "Defendant must establish that production of the source code is a linchpin to undermining the Commonwealth's case as it pertains to the DNA evidence on the bandanna", the lower Court then mischaracterized the Defendant's position. At page two of its Opinion, first full paragraph, the lower Court stated: "In support of its assertion, Defendant alleges that True Allele's reliability cannot be evaluated without the source code". This is not what the Defendant has alleged. The Defendant is not advancing a Frye issue. The lower Court therefore misapprehended the Defendant's position.

On page 135 of the transcript of day two of the hearing on this issue, the lower Court, in response to Mr. Haber, stated as much:

" The source code issue has to do with whether or not the True Allele software can be validated by scientific method rather than by access to the source code itself or the True Allele Software."

This is **NOT** the issue. The lower Court has mischaracterized the issue as a Frye issue. Instead, the issue is a constitutional issue dealing with the right to effectively confront and cross-examine an expert witness at trial. On the same page of transcript, the Court continued:

"[The issue is] whether or not the source code is necessary to validate it..."

Again, this is **NOT** the issue. The lower Court then compounded its error of mischaracterizing the issue by citing the case of Commonwealth vs. Foley, 38 A.3d 882 (Pa.Super. 2012), which

addresses a wholly different issue. Foley addressed the *admissibility* of novel scientific evidence. The Foley decision did not address, in any way, whatsoever, an accused's 6<sup>th</sup> Amendment right to effectively confront and cross-examine an expert witness. The Foley decision has nothing to do with this 6<sup>th</sup> Amendment issue. Foley dealt solely with admissibility of novel scientific evidence. In contrast, the issues here are (i) the Petitioner's constitutional right to effectively cross-examine an expert witness and (ii) the discoverability and materiality of the computer instructions to Cybergenetics' computer program *to enable the Defendant to effectively cross-examine the witness at trial*. Foley mentioned, in one sentence, that "scientists can validate the reliability of a computerized process even if the 'source code' underlying that process is not available to the public." This, however, is dicta – at best. The Foley Court did not address the discoverability of the source code and the Defendant's constitutional right to effectively cross-examine the expert. This is because Foley, unlike the Petitioner here, did not raise that issue. The sole issue in Foley was whether the methodology passed the Frye test. Moreover, it fails to address an accused's 6<sup>th</sup> Amendment right to effectively confront and cross-examine an expert witness. Third, just because a computerized process has been deemed "reliable" by scientists does not mean it is without flaws – flaws that can rise to the level of reasonable doubt.

The lower Court's refusal to certify its denial of the Petitioner's right to the computer instructions to Cybergenetics software system was egregious in that the lower Court: (1) mischaracterized the Petitioner's position; (2) mischaracterized the issue; and (3) then cited a case, Foley, which has nothing to do with the issue.

Next, the lower Court held that the Petitioner's request for the source code was not "reasonable" because Dr. Mark Perlin, the founder of Cybergenetics, stated in a Declaration that disclosure of the source code would *potentially* put him out of business. The Court stated:

“An order requiring Cybergenetics to produce the source code would be unreasonable, **as release would have the potential to cause great harm to Cybergenetics. Rather than comply, Dr. Perlin could decline to act as a Commonwealth expert, thereby seriously handicapping the Commonwealth’s case. (Emphasis added).**

First of all, Perlin is *not* an expert in Intellectual Property Law nor was he qualified, in a declaration or on the witness stand, to give any opinion as to economic harm which might befall his company upon production of the computer instructions. The Commonwealth could have called an expert in the field of Intellectual Property to testify - but chose not to. In contrast, the Petitioner called Attorney John McIlvaine who was qualified as an expert in the field of Intellectual Property, specifically the areas of trade secrets and patents. Mr. McIlvaine, an expert in Intellectual Property, provided unrebutted, unequivocal expert testimony that no harm would befall Cybergenetics from production of the source code to the defense in this case because the lower Court could issue a Protective Order – which, as McIlvaine testified - is the common remedy/mechanism utilized by Courts throughout the United States in this precise situation. Attorney McIlvaine, who represents clients who have created source codes which they wish to be protected, testified that the issuance of a Protective Order would fully protect Cybergenetics and its financial interests.

Notably, **Pennsylvania Rule of Criminal Procedure 573, Section (F)**, specifically mandates the issuance of a Protective Order in a situation such as this to restrict the production of discovery information:

“Upon a sufficient showing, the court may at any time order that the discovery or its

inspection be...restricted...or make such other order as is appropriate.”

Here, the lower Court unabashedly displayed actual bias in favor of the Commonwealth which objectively calls into question its impartiality. The “handicapping” of the Commonwealth’s case if the lower Court were to Order production of the source code is **NOT** a consideration in the pertinent legal analysis. The lower Court not only actually considered this in making its decision, it was the principal consideration. It is beyond inappropriate for the lower Court to concern itself with the strength of the Commonwealth’s case rather than with strictly the constitutional rights of the accused. A court cannot consider which party has the stronger case and how the court’s rulings may affect the strength or weakness of the parties’ respective cases. The *appearance* of impropriety is sufficient justification for the grant of new proceedings before another judge. In re Lokuta, 11 A.3d 427 (Pa. 2011). Here, the rationale of the lower Court for denying the Petitioner the computer instructions does not involve the mere appearance of impropriety – it involves actual impropriety. It was absolutely improper for the lower Court to base its denial to produce the computer instructions on the fact that ordering production would weaken the Commonwealth’s case. Here, the record demonstrates actual bias. Any tribunal permitted to try cases and controversies must not only be unbiased, but must avoid even the appearance of bias. Commonwealth vs. White, 910 A.2d 648 (Pa. 2006). Clearly, the lower Court is biased in favor of the Commonwealth and Cybergenetics. The lynchpin of our system is that the accused, Michael Robinson, receive a fair trial. Here, it is apparent that Cybergenetics making another million dollars is of greater priority and importance to the lower Court than the lower Court giving Michael Robinson a fair trial. Why does the lower Court make no mention of its contempt powers? The lower Court ruled: “Rather than comply” [with the lower Court’s

Order to produce the computer instructions], Dr. Perlin could decline to act as a Commonwealth expert”. Why is Perlin not answerable to the lower Court? Any witness who defies a Court Order is subject to Contempt. Why not Cybergenetics? This demonstrates a bias not only in favor of the Commonwealth, but Cybergenetics.

Separate from the actual bias displayed by the lower Court, its conclusion that production of the computer instructions “would have the *potential* to cause great [financial] harm to Cybergenetics” (*emphasis added*) is not only wholly unsupported by any record evidence, it is contradicted by the record evidence. Furthermore, Dr. Perlin has obtained numerous patents on the True Allele Casework System. This is evident from his CV, his brochures wherein he markets his product, the True Allele software program, and upon review of his applications to the United States Patent Office. These patents fully protect Cybergenetics from someone “stealing” the instructions to their software program.

The lower Court next held that a substantial ground for a difference of opinion does not exist as to the discoverability of the computer instructions to the software system. Nothing could be further from the truth.

A substantial ground for difference of opinion exists as to the discoverability of the source code/instructions to the software program.

In the matter of the State of California vs. Martell Chubbs, wherein the State of California is employing Cybergenetics in similar fashion, the Defendant sought production of the source code to its software program.

Counsel for Mr. Chubbs presented a Motion to Compel to the Honorable Jeffrey Manning, asking that he Order production of the Source Code. In a 7 page Opinion, Judge Manning stated as follows about the materiality and discoverability of the computer instructions:

- a. “In that Certificate, Judge Romero made the following relevant findings:
2. Perlin is a material witness for the prosecution;
  3. in his possession and under his control are source codes to True Allele which are material to the prosecution;
- (Opinion, page 2)*
- b. Nothing that was presented to this Court during the June 9 hearing called into question the accuracy of Judge Romero’s materiality determination.
- (Opinion, page 4).*
- c. “It is beyond cavil...that the evidence that is sought to be produced [the source code] is material”.
- (Opinion, page 3).*
- d. “The evidence that places the defendant at the scene of a crime is without question “material”. The means by which Dr. Perlin arrived at his opinions is likewise material. The argument that Dr. Perlin is not a material witness and or that the evidence sought to be produced is not material is specious”. *(Opinion at 4).*
- e. “More importantly, it is apparent...that this evidence is sought to allow the defendant in that case to effectively cross-examine Dr. Perlin. Just because evidence is [inadmissible] does not mean that it cannot be subject to cross-examination”. *(Opinion at 5).*
- d. “Nothing in Commonwealth vs. Foley would prevent cross-examination of an expert based upon the source code or pseudo source codes, even in the Commonwealth of Pennsylvania”. *(Opinion at 6).*

- f. “The commercial value of [the source code] is something that can readily be protected by Judge Romero.” (*Opinion at 6*).

(*See Opinion and Order of Honorable Jeffrey Manning, Exhibit G*).

Thus, a substantial ground for difference of opinion exists as to the discoverability of the source code because Judge Manning ruled that it *is* discoverable. Although the lower Court has indicated that it does not interpret Judge Manning’s Opinion to rule that the source code is material and discoverable, this interpretation strains credulity. Objectively speaking, a reasonable interpretation of Judge Manning’s Opinion is that he has most certainly ruled that it is material and discoverable. Therefore, a difference of opinion as to the discoverability of the source code clearly exists - even between two judges who are on the same floor in the Allegheny County Courthouse.

Further, the Petitioner’s argument as to his entitlement to the source code, on its face, is legally sound and satisfies the mandate of Brady vs. Maryland. The computer instructions are material to the preparation of his defense, the request for them is reasonable in that no economic harm will befall Cybergenetics per the unrebutted, unequivocal expert opinion of defense witness John McIlvaine, and production of same is in the interests of justice because without production, Michael Robinson will be denied his 6<sup>th</sup> Amendment Constitutional Right to effectively confront and cross-examine the Cybergenetics expert, and because he faces execution if convicted. Dr. Perlin’s credibility at trial will be the paramount issue at trial. The reliability of Perlin’s opinions will be determinative of whether or not the jury finds Michael Robinson guilty or not guilty. Commonwealth vs. Tharp, 101 A.3d 736 (Pa. 2014) mandates that Michael Robinson receive the source code in order for his counsel to be afforded a (i) *full* and (ii) fair opportunity to cross-examine Dr. Perlin – particularly due to the extreme nature of the possible outcome, the



execution of the Petitioner. The computer instructions are material, the request for them is reasonable, and the production is in the interests of justice. In the absence of the production of the computer instructions to the defense, there is no way it can be said that Petitioner will receive a fair trial – understood as a trial resulting in a verdict worthy of confidence.

At the hearing before the lower Court, Dr. Chakraborty, a world renowned DNA expert and Population Geneticist, testified for the defense that he has reviewed the Reports of the Cybergenetics' expert, the "Case Summary Packet" and related promotional materials produced by the Commonwealth, as well as the validation studies authored by Perlin. None of this documentation contains the full, complete, and entire basis for Cybergenetics' opinions. First of all, Chakraborty is credited with discovering the first 13 loci (locations) on strands of DNA which locations are used throughout the world today in every DNA typing/ identification test conducted. (*See Exhibit, Chakraborty testimony, page 27, lines 8-21*). Chakraborty has also published over 524 papers to-date, and testified over 200 times as a DNA identification expert - 185 as a Government witness - in over 28 states and in Canada, Germany, Ireland and England. (*Pages 29, 156*). Dr. Chakraborty's testimony establishes that a substantial difference of opinion exists as to the materiality of the computer instructions. In fact, Dr. Chakraborty testified that he needs the computer instructions ("source code") to learn, assess and challenge the process by which Cybergenetics' computer program arrived at its findings, conclusions and opinions.

"Q. Now, in all of the materials that have been provided, which you have reviewed, starting with Doctor Perlin's first three-page report, to a second three page report, to the Case Packet, to the Standard Operating Procedures, in any of the documentation that has been provided which you reviewed, is there any identification of what the assumptions are that is referenced in the sentence I just read [from the Cybergenetics' Standard Operating Procedures Manual], "The computer takes these requests and using the assumptions, options and processing parameters, infers genotypes from the data?" Is there

anything in any of the documentation which lets you know what those assumptions are?

A. No.

Q. Does anything in the documentation let you know how many assumptions were made?

A. No.

Q. Next...is there anything in the documentation that you reviewed telling what those options were and are?

A. Only vague indications, like, DNA degraded, but nothing more specific than that.

Q. Now, do you know where the information that you need – where is that information contained?

A. [In the] instructions to the computer through the source code.

A. For example, Dr. Perlin's own admission the True Allele system is not a single formula. It is a series of steps of computations...It is a series of different steps of computations...And these computations are done based on the results of the previous computation. Consequently, the computer operator who is running the True Allele Software, he or she has to give instructions to the computer, based on the intermediate results what would be the next set of computations to be done. ...It is not a plug and play kind of software. It is a decision tree kind of a procedure."

*(See Exhibit "A", Chakraborty testimony, pages 43-47).*

The lower Court weakly tried to claim that no substantial ground for difference of opinion exists as to the discoverability of the computer instructions by characterizing Judge Manning in the Chubbs matter as "merely" enforcing a Subpoena Duces Tecum. Yet, it was on the explicit bases that the source code is material and discoverable and that an accused has a Constitutional right to conduct effective, meaningful cross-examination at trial that Judge Manning enforced this Subpoena. The lower Court also asserted that "Ultimately, the California Superior Court [in the Chubbs matter] did not require Cybergenetics to produce the source

code.” Yet the limited holding in Chubbs was that the attorney for Chubbs had not made a sufficient enough showing for entitlement to the source code. In fact, the defense attorney, Angelyn Gates, Esquire, merely offered the court a generic Affidavit. Here, your Petitioner called Dr. Chakraborty and Attorney John McIlvaine who testified unequivocally for the need for the source code and that a protective order would fully protect the economic interests of Cybergenetics. The lower Court also referenced the cases of Commonwealth vs. Chelsea Arganda and Chester White and claimed that Judge Manning declined to read his Chubbs Opinion as controlling. In truth, however, the proceeding before Manning, oral argument, was truncated:

“I don’t want to hear this whole thing right now.”

*(The Honorable Jeffrey Manning, page 5, transcript of oral argument, October 20, 2015, in the White/Arganda matter).*

Judge Manning’s Opinion in the Chubbs matter as to the materiality and discoverability of the computer instructions speaks for itself, and it speaks loudly and clearly.

The lower Court lastly cites to a ruling by Judge Borkowski in a case wherein Borkowski quashed a Subpoena. In fact, the defense in that case, Wade, unlike the Petitioner here, made no showing for their entitlement to the computer instructions.

For all of the above compelling reasons, it is clear that the lower Court abused its discretion in not certifying its December 7, 2015 discovery Order for immediate appeal. The refusal to do so was so egregious that it justifies prerogative appellate correction of the exercise of discretion by the lower Court, particularly in view of the bias displayed by the lower Court, as well as the clear showing by the Petitioner that the issue involves (i) a controlling issue of law

(ii) about which there exists substantial ground for a difference of opinion, and (iii) appellate resolution of this issue at this time will materially advance the resolution of the issue.

**F. Statement of Relief Sought.**

1. Michael Robinson prays this Honorable Court to accept jurisdiction of this Petition for Review.

Respectfully, case precedent mandates that this Court accept jurisdiction of this Petition for Review. In Commonwealth vs. Mejia-Arias, 734 A.2d 870 (Pa. Super. 1999), this Court accepted jurisdiction of a Petition for Review filed by the Pennsylvania Attorney General's Office. The Defendant in Mejia-Arias had served two Subpoena Duces Tecums requesting the personnel files and investigative files of two Narcotics Agents who had been under investigation for issues relating to their Affidavits of Probable Cause. The Defendant argued that due process, compulsory process, and the right to present a defense required that he have access to the files. The Defendant articulated a reason to believe that the officers' personnel files may contain exculpatory information and was therefore entitled to review material in the personnel files that may be relevant and material to his defense. In rejecting the Commonwealth's proposed limitation that the lower Court review the files *in camera* and produce to the Defendant only what the lower Court thought was discoverable, the Court ruled:

“A determination of whether the statements of the prosecution witness would have been helpful to the defense is not to be made by the prosecution or the trial court. Matters contained in a witness' statement may appear innocuous to some, **but have great significance to counsel viewing the statements from the perspective of an advocate for the accused about to cross-examine a witness**’. Citing the Pennsylvania Supreme

Court's ruling in Commonwealth vs. French, 578 A.2d 1292 (1990)". (**Emphasis added**).

Although the requests in the subpoenas were deemed overbroad, the Superior Court ruled that the Defendant was in fact entitled to review the information in the officers' personnel files regarding complaints and/or investigations into the officers' purported past malfeasance in swearing out affidavits of probable cause. This case supports the fact that this Court should accept jurisdiction of this Petition for Review. Although the information sought by Mejia-Arias was important, the computer instructions to the software system is even more vital to defending against DNA expert testimony of the Commonwealth in a Capital Murder case.

In Commonwealth vs. Gibbs, 626 A.2d 133, (Pa. 1993), this Court accepted jurisdiction of a Petition for Review filed by the Defendant, Gibbs. Gibbs sought to bar the Commonwealth from seeking the death penalty at his re-trial because the jury at the first trial, at the sentencing phase, did not find that several aggravating factors presented by the Commonwealth existed. The Court therefore accepted jurisdiction of the Petition for Review.

In Commonwealth vs. Tilley, 780 A.2d 650 (Pa. 2001), a death penalty case, the Defendant raised during Post-Conviction Relief Proceedings that his prosecutors, during jury selection, impermissibly struck potential jurors on the basis of race. The PCRA Court granted the Defendant the right to conduct discovery into this issue. The Commonwealth filed a Petition for Review, which was accepted by this Court. In Commonwealth vs. Guy, 686 A.2d 397 (Pa. Super. 1996), a rape case, this Court accepted jurisdiction of a Petition for Review filed by the Commonwealth which also involved a discovery issue. The trial judge granted a defense Motion in Limine seeking drug and alcohol-related hospital records of the alleged victim. To properly define the scope of what issues the Defendant could cross-examine the alleged victim on, the

Court accepted jurisdiction. In Commonwealth vs. Boyle, the Defendant filed an Omnibus Pre-trial Motion challenging jurisdiction. The trial Court dismissed the Motion. Boyle filed a Petition for Review, which this Court granted to review the issue on its merits.

In light of all of the above cases, it is clear that the overwhelming weight of authority mandates that this Court accept jurisdiction of this Petition for Review so that it can address this important constitutional issue on its merits.

2. Michael Robinson also requests this Court to reverse the December 7, 2015 discovery Order of the trial judge and to Order Cybergenetics to immediately produce its complete and entire source code to the defense. As indicated to the lower Court, all members of the defense team will sign Undertakings making themselves subject to a Protective Order issued by the Court.

In refusing to produce the computer instructions to its software system, what Cybergenetics is saying is: “Even though the Crime Lab could not reach any conclusions about the identities of the contributors to the bandanna, our computer program did, but **we’re not going to tell you how we reached our conclusions. We’re not going to tell you what we instructed the computer to do with the crime lab data**”. This renders the 6<sup>th</sup> Amendment impotent and meaningless. It guarantees that Michael Robinson will be denied a fair trial. The hallmark of our criminal justice system is that it is **adversarial**. The Petitioner is entitled to know the full, complete and entire process and basis upon which the opinions of the Cybergenetics’s expert were arrived at. Due process dictates this. It is not for the Commonwealth nor Cybergenetics to tell the defense what is material to the defense’s preparation. See Commonwealth vs. Mejia-Arias, supra. It is undisputed that a party is entitled to know, prior to trial, the full, complete, and entire basis for the opinion of the opposing parties’ expert. It is also undisputed that credibility is always relevant. Here, it is undisputed that the testimony of Cybergenetics’s expert is the lynchpin of the DNA testimony inculpatng Michael Robinson.

In its response to this Petition, the Commonwealth, will attempt to tout “validation studies” of Cybergenetics’ computer program. However, 6 out of the 7 studies were authored by Dr. Perlin of Cybergenetics himself. He was a co-author and participant in the 7<sup>th</sup> study as well. None of these studies are *external* validation studies. They are internal, subjective studies. They are not objective, despite whatever spin Perlin puts on them. Most importantly, none of these studies contain the computer instructions to the software program. Accordingly, these “validation studies” are a red herring, and of no moment.

In short, if the defense obtained a DNA expert who had invented his own computer program, who concluded that Michael Robinson was *excluded* as a contributor to the bandanna, and the defense expert’s Report consisted of one sentence which stated that the defense expert’s computer software program “objectively inferred” the genotypes, the Commonwealth would most certainly request the source code to the software program. Any objection thereto by the defense, that the Commonwealth simply take the defense expert’s “word for it” would be scoffed at, and the source code of the defense expert would be ordered produced.

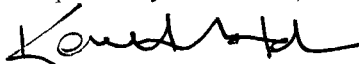
Finally, the unequivocal, unrebutted expert testimony of Attorney John McIlvaine established that a Protective Order will fully protect the financial interests of Cybergenetics.

**WHEREFORE**, in the interests of fundamental fairness, due process, and in light of his 6<sup>th</sup> Amendment right to a fair trial and his right to effectively confront and cross-examine the Commonwealth’s DNA Expert at trial, as well as to be able to put on a case in chief to defend against the complex mixture DNA evidence, Michael Robinson respectfully requests this Court to accept jurisdiction of this Petition for Review because the December 7, 2015 discovery Order of the lower Court involved a controlling question of law as to which a substantial ground for difference of opinion exists and an immediate appeal therefrom will materially advance the

ultimate determination of whether he will be afforded a fair trial, his right under the Pennsylvania and United States Constitutions. Mr. Robinson therefore asks this Court to find that the lower Court's refusal to amend its interlocutory Order dated December 7, 2015 was egregious and warrants prerogative appellate correction.

Mr. Robinson secondly requests this Honorable Court to **REVERSE** the December 7, 2015 discovery Order of the lower Court and **ORDER** Cybergenetics to immediately produce its source code to the True Allele Casework System.

Respectfully submitted,



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Noah Geary, Esquire  
Attorney for Michael Robinson  
304 Ross Street, Suite 600  
Pittsburgh, PA 15219  
(412) 232-7000

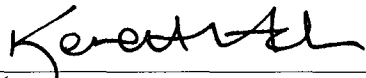
Ken Haber, Esquire  
Attorney for Michael Robinson  
304 Ross Street, Suite 400  
Pittsburgh, PA 15219  
(412) 338-9990



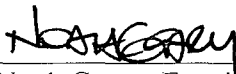
**VERIFICATION:**

We, Noah Geary, Esquire and Kenneth Haber, Esquire, hereby verify that the statements made in the foregoing **PETITION FOR REVIEW** are true and correct to the best of our knowledge, information and belief. We understand that this Verification is made subject to Title 42 Pa.C.S.A. Section 4904, relating to unsworn falsification to authorities. We are authorized to make this Verification due to our position as legal counsel.

March 7, 2016

  
\_\_\_\_\_  
Kenneth Haber, Esquire

March 7, 2016

  
\_\_\_\_\_  
Noah Geary, Esquire

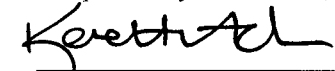
**PROOF OF SERVICE:**

I, Kenneth Haber, Esquire, hereby certify that on this day I served the foregoing  
**PETITION FOR REVIEW** upon the following persons, via hand delivery:

Daniel Edward Fitzsimmons, Esquire  
Brian Catanzarite, Esquire  
Assistant District Attorney  
Allegheny County Courthouse  
436 Grant St #303  
Pittsburgh, PA 15219

Honorable Jill Rangos  
Judges Chambers  
3<sup>rd</sup> Floor  
Allegheny County Courthouse

Respectfully submitted,



---

Ken Haber, Esquire  
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March 7, 2016

# EXHIBIT A

IN THE COURT OF COMMON PLEAS OF ALLEGHENY COUNTY, PENNSYLVANIA  
CRIMINAL DIVISION

COMMONWEALTH OF PENNSYLVANIA )  
 )  
 v. ) CC 201307777  
 )  
 MICHAEL ROBINSON, )  
 )  
 Defendant )

MEMORANDUM ORDER

AND NOW, to-wit, this 4th day of February, 2016, this Court hereby DENIES  
Defendant's "Application Pursuant to Title 42 Pa.C.S.A. Section 702(B), Interlocutory Orders,  
for Amendment to Include Certification of the Interlocutory Discovery Order Issued on  
December 7, 2015." This Court denied Defendant's discovery request for the "source code" for  
Cybergenetics TrueAllele Casework System, which was used to test a bandana recovered from  
the crime scene which the Commonwealth alleges belongs to Defendant. This source code is the  
intellectual property of Cybergenetics.

Pa. R. Crim. P. 573 states that a trial court may permit discovery of items which are  
material, reasonable and in the interests of justice, and Defendant asserts that his request for the  
source code has met this criteria. However, "[e]vidence is material only if there is a reasonable  
probability that, had the evidence been disclosed to the defense, the result of the proceeding  
would have been different. A 'reasonable probability' is a probability sufficient to undermine  
confidence in the outcome." *Pennsylvania v. Ritchie*, 480 U.S. 39, 57 (1987). Since materiality  
requires that the material sought must be outcome-determinative (*See also Commonwealth v.*  
*Tharp*, 101 A.3d 736, 748 (Pa. 2014)), Defendant must establish that production of the source

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code is a linchpin to undermining the Commonwealth's case as it pertains to the DNA evidence on the bandana.

In support of its assertion, Defendant alleges that TrueAllele's reliability cannot be evaluated without the source code. The Pennsylvania Superior Court, in *Commonwealth v. Foley*, 38 A.3d 882 (Pa. Super. 2012) (*en banc*), disagreed. The *Foley* court discussed whether TrueAllele testing was admissible pursuant to *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923) and in so doing found that TrueAllele was not "novel" science. *Foley* addressed the issue of assessing the reliability of TrueAllele without the production of the source codes and determined that scientists could validate the reliability of TrueAllele without the source code. *Id.* at 889-90. In addition, the *Foley* court noted that the trial court had "[found] Dr. Perlin's methodology [to be] a refined application of the "product rule," a method for calculating probabilities that is used in forensic DNA analysis." *Foley*, 38 A.3d at 888. The Superior Court noted that evidence based on the product rule previously has been deemed admissible under *Frye*. *Id.*, citing *Commonwealth v. Blasioli*, 713 A.2d 117, 1118 (Pa. 1998).

As the defense has argued that *Foley* is not controlling on the question of materiality of the source code, this Court held a two day hearing and considered expert testimony and argument. After considering the testimony, this Court determined that the source code is not material to the defendant's ability to pursue a defense.

Moreover, release of the source code would not be reasonable under Pa. R. Crim. Pro. 573 (A). Dr. Mark Perlin, founder of Cybergenetics, stated in his April 2015 Declaration that disclosure of the source code would cause irreparable harm to the company, as other companies would be able to copy the code and potentially put him out of business. (Commonwealth's Supplemental Answer to Motion for Discovery, Exhibit 1, "Declaration of Mark W. Perlin, April

2015” para. 54-55) An order requiring Cybergenetics to produce the source code would be unreasonable, as release would have the potential to cause great harm to Cybergenetics. Rather than comply, Dr. Perlman could decline to act as a Commonwealth expert, thereby seriously handicapping the Commonwealth’s case.

42 Pa.C.S. § 702(b) states that if the trial court believes the interlocutory order “involves a controlling question of law as to which there is substantial ground for difference of opinion and that an immediate appeal from this order may materially advance the ultimate termination of the matter, it shall so state in such order.” This Court is not of the opinion that the discoverability of the source code for Cybergenetics’ TrueAllele Casework system involves a controlling issue of law to which a substantial ground for a difference of opinion exists. Defendant alleges that the Honorable Jeffrey A. Manning’s ruling in the *State of California v. Martell Chubbs* creates a substantial ground for a difference of opinion. However, in that case J. Manning merely enforced a subpoena *duces tecum* ordering Dr. Perlman to appear in California with the documents subject to the subpoena but he left the ultimate disposition of the discovery request to the California court. Ultimately, the California Superior Court did not require Cybergenetics to produce the source code.<sup>1</sup> Further, J. Manning, in another pending matter involving a discovery request for the TrueAllele source code, declined<sup>2</sup> to read his ruling in *Chubbs* as controlling or contradictory and deferred to this Court for a ruling on the issue of the discoverability of source code. Similarly, the Honorable Edward J. Borkowski, without a hearing, quashed a subpoena *duces tecum* requesting production of the TrueAllele source code in another case pending in this Court.<sup>3</sup>

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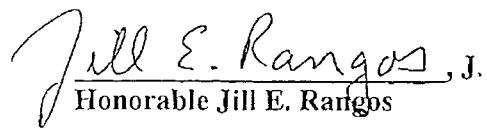
<sup>1</sup> 2015 WL 139069 (Unpublished Opinion)

<sup>2</sup> *Commonwealth v. Chelsea Arganda and Chester White*, CC# 2013-17748 and CC# 2013-17753.

<sup>3</sup> *Commonwealth v. Wade*, CC# 2014-04799.

Reviewing *Foley* and *Chubb*, as well as the pretrial proceedings of record in other matters pending before my colleagues in the Criminal division of the Court of Common Pleas of Allegheny County, and taking into consideration the briefs and arguments of the parties, this Court finds no reason to certify its December 7, 2015 Discovery Order for Interlocutory Appeal.

BY THE COURT:

  
Honorable Jill E. Rangos

**EXHIBIT B**



IN THE COURT OF COMMON PLEAS OF ALLEGHENY COUNTY, PENNSYLVANIA

CRIMINAL DIVISION

COMMONWEALTH OF PENNSYLVANIA )

v. )

MICHAEL ROBINSON, )

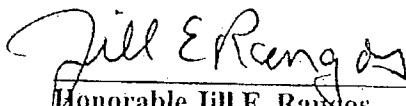
Defendant )

CC 201307777

ORDER OF COURT

AND NOW, to-wit, this 7th day of December, 2015, having considered testimony, exhibits, and arguments presented, this Court hereby DENIES Defendant's Discovery Motion to the extent it requests production of True Allele Casework software source code.

BY THE COURT:

 J.  
Honorable Jill E. Rangos

**EXHIBIT C**

# The Washington Post

Public Safety

## FBI admits flaws in hair analysis over decades

By Spencer S. Hsu April 18

The Justice Department and FBI have formally acknowledged that nearly every examiner in an elite FBI forensic unit gave flawed testimony in almost all trials in which they offered evidence against criminal defendants over more than a two-decade period before 2000.

Of 28 examiners with the FBI Laboratory's microscopic hair comparison unit, 26 overstated forensic matches in ways that favored prosecutors in more than 95 percent of the 268 trials reviewed so far, according to the National Association of Criminal Defense Lawyers (NACDL) and the Innocence Project, which are assisting the government with the country's largest post-conviction review of questioned forensic evidence.

The cases include those of 32 defendants sentenced to death. Of those, 14 have been executed or died in prison, the groups said under an agreement with the government to release results after the review of the first 200 convictions.

The FBI errors alone do not mean there was not other evidence of a convict's guilt. Defendants and federal and state prosecutors in 46 states and the District are being notified to determine whether there are grounds for appeals. Four defendants were previously exonerated.

The admissions mark a watershed in one of the country's largest forensic scandals, highlighting the failure of the nation's courts for decades to keep bogus scientific information from juries, legal analysts said. The question now, they said, is how state authorities and the courts will respond to findings that confirm long-suspected problems with subjective, pattern-based forensic techniques — like hair and bite-mark comparisons — that have contributed to wrongful convictions in more than one-quarter of 329 DNA-exoneration cases since 1989.

In a statement, the FBI and Justice Department vowed to continue to devote resources to address all cases and said they "are committed to ensuring that affected defendants are notified of past errors and that justice is done in every instance. The Department and the FBI are also committed to ensuring the accuracy of future hair analysis testimony, as well as the application of all disciplines of forensic science."

Peter Neufeld, co-founder of the Innocence Project, commended the FBI and department for the collaboration but said, "The FBI's three-decade use of microscopic hair analysis to incriminate defendants was a complete disaster."

"We need an exhaustive investigation that looks at how the FBI, state governments that relied on examiners trained by the FBI and the courts allowed this to happen and why it wasn't stopped much sooner," Neufeld said.

Norman L. Reimer, the NACDL's executive director, said, "Hopefully, this project establishes a precedent so that in future situations it will not take years to remediate the injustice."

While unnamed federal officials previously acknowledged widespread problems, the FBI until now has withheld comment because findings might not be representative.

Sen. Richard Blumenthal (D-Conn.), a former prosecutor, called on the FBI and Justice Department to notify defendants in all 2,500 targeted cases involving an FBI hair match about the problem even if their case has not been completed, and to redouble efforts in the three-year-old review to retrieve information on each case.

"These findings are appalling and chilling in their indictment of our criminal justice system, not only for potentially innocent defendants who have been wrongly imprisoned and even executed, but for prosecutors who have relied on fabricated and false evidence despite their intentions to faithfully enforce the law," Blumenthal said.

Senate Judiciary Committee Chairman Charles E. Grassley (R-Iowa) and the panel's ranking Democrat, Patrick J. Leahy (Vt.), urged the bureau to conduct "a root-cause analysis" to prevent future breakdowns.

"It is critical that the Bureau identify and address the systemic factors that allowed this far-reaching problem to occur and continue for more than a decade," the lawmakers wrote FBI Director James B. Comey on March 27, as findings were being finalized.

The FBI is waiting to complete all reviews to assess causes but has acknowledged that hair examiners until 2012 lacked written standards defining scientifically appropriate and erroneous ways to explain results in court. The bureau expects this year to complete similar standards for testimony and lab reports for 19 forensic disciplines.

Federal authorities launched the investigation in 2012 after The Washington Post reported that flawed forensic hair matches might have led to the convictions of hundreds of potentially innocent people since at least the 1970s, typically for murder, rape and other violent crimes nationwide.

The review confirmed that FBI experts systematically testified to the near-certainty of "matches" of crime-scene hairs to defendants, backing their claims by citing incomplete or misleading statistics drawn from their case work.

In reality, there is no accepted research on how often hair from different people may appear the same. Since 2000, the lab has used visual hair comparison to rule out someone as a possible source of hair or in combination with more accurate DNA testing.

Warnings about the problem have been mounting. In 2002, the FBI reported that its own DNA testing found that examiners reported false hair matches more than 11 percent of the time. In the District, the only jurisdiction where defenders and prosecutors have re-investigated all FBI hair convictions, three of seven defendants whose trials included flawed FBI testimony have been exonerated through DNA testing since 2009, and courts have exonerated two more men. All five served 20 to 30 years in prison for rape or murder.

University of Virginia law professor Brandon L. Garrett said the results reveal a "mass disaster" inside the criminal justice system, one that it has been unable to self-correct because courts rely on outdated precedents admitting scientifically invalid testimony at trial and, under the legal doctrine of finality, make it difficult for convicts to challenge old evidence.

"The tools don't exist to handle systematic errors in our criminal justice system," Garrett said. "The FBI deserves every recognition for doing something really remarkable here. The problem is there may be few judges, prosecutors or defense lawyers who are able or willing to do anything about it."

Federal authorities are offering new DNA testing in cases with errors, if sought by a judge or prosecutor, and agreeing to drop procedural objections to appeals in federal cases.

However, biological evidence in the cases often is lost or unavailable. Among states, only California and Texas specifically allow appeals when experts recant or scientific advances undermine forensic evidence at trial.

Defense attorneys say scientifically invalid forensic testimony should be considered as violations of due process, as courts have held with false or misleading testimony.

The FBI searched more than 21,000 federal and state requests to its hair comparison unit from 1972 through 1999, identifying for review roughly 2,500 cases where examiners declared hair matches.

Reviews of 342 defendants' convictions were completed as of early March, the NACDL and Innocence Project reported. In addition to the 268 trials in which FBI hair evidence was used against defendants, the review found cases in which defendants pleaded guilty, FBI examiners did not testify, did not assert a match or gave exculpatory testimony.

When such cases are included, by the FBI's count examiners made statements exceeding the limits of science in about 90 percent of testimonies, including 34 death-penalty cases.

The findings likely scratch the surface. The FBI said as of mid-April that reviews of about 350 trial testimonies and 900 lab reports are nearly complete, with about 1,200 cases remaining.

The bureau said it is difficult to check cases before 1985, when files were computerized. It has been unable to review 700 cases because police or prosecutors did not respond to requests for information.

Also, the same FBI examiners whose work is under review taught 500 to 1,000 state and local crime lab analysts to testify in the same ways.

Texas, New York and North Carolina authorities are reviewing their hair examiner cases, with ad hoc efforts underway in about 15 other states.

Spencer S. Hsu is an investigative reporter, two-time Pulitzer finalist and national Emmy award nominee.

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**EXHIBIT D**



# FBI hair analysis problems reveal limits

By Eric Tucker  
Associated Press

WASHINGTON — Kirk Odom was convicted of a 1981 rape and robbery after a woman identified him as her attacker and an FBI specialist testified that hair on her nightgown was similar to hair on Odom's head.

But DNA testing some 30 years later affirmed what Odom long maintained: The hair wasn't his; neither was the semen left on a pillowcase and robe. A felony conviction that imprisoned him for decades was overturned in 2012 by a judge who declared it a "grave miscarriage of justice."

"I was hoping that I was going to go home that day," Odom, recalling his trial in Washington, D.C., said in an interview. Instead, "they sentenced me to 20 to 65 years in prison."

His experience is but one example of flawed forensic science from the pre-DNA era, a simmering problem that now appears far more widespread than initially thought. The Innocence Project, which works to exonerate the wrongly accused, has identified 74 overturned convictions in which faulty hair evidence was a factor. Now, a new disclosure by the FBI that experts gave erroneous testimony on hair analysis in more than 250 trials before 2000 suggests that number could rise dramatically.

Defense lawyers said the latest revelations — on top of established concerns about bite mark identification and arson science — confirm fears about the shortcomings of old-



Associated Press

Kirk Odom speaks to the Associated Press at his home in southeast Washington April 30.

fashioned forensic techniques and could affect thousands of cases. Advancing technologies have put such techniques under more scrutiny, including from judges, and highlighted the limits of once-established practices.

"There are forces converging at the moment that are finally bringing some recognition to the failings of many venerable techniques," said Chris Fabricant, director of strategic litigation at the Innocence Project.

A 2013 Associated Press investigation concluded that at least 24 men convicted or charged with murder or rape based on bite-mark evidence — the practice of matching teeth to a flesh wound — were exonerated since 2000. Meanwhile, some high-profile criminal cases involving arson science have come under renewed scrutiny amid debunked fire investigations. Last year, a Pennsylvania judge threw out the conviction of a Korean immigrant who had spent 24 years in

prison for his daughter's death.

When subjective speculation is injected into a trial under the guise of science, "then a real perversion of justice is what happens," Fabricant said.

Microscopic hair analysis, which involves comparing hair specimens through a microscope, has for decades been an established FBI practice and passed along at seminars to hundreds of state-level examiners.

But critics said the technique lacks objective standards, with limitations that have led experts to overstate its evidentiary value too often.

Though this kind of evidence may be used to include or exclude individuals who could be a potential source of hair, critics note that there's no way to conclusively know how common or rare the specimen is because no national database of hair specimens exists. A 2009 report from the National Academy of Sciences described as "highly unreliable" testimony

purporting to identify a particular defendant through hair analysis.

The FBI still considers microscopic hair analysis valid, but has also acknowledged its scientific limitations and uses it now in conjunction with more scientifically reliable DNA testing.

The Justice Department in 2012 embarked on a review of criminal cases following high-profile exonerations in which microscopic hair analysis was used. The government has identified nearly 3,000 cases in which FBI examiners submitted reports or may have testified in trials involving hair analysis.

The government provided an astonishing update last month when it revealed that of the 268 trials reviewed as of mid-March, investigators found erroneous statements from FBI experts in nearly all of the cases — including in death-penalty prosecutions. The review is limited to cases dating before 2000 in which FBI examiners provided evidence. But the number of affected cases would almost certainly be much higher if the review took into account cases involving state examiners who were trained by the FBI.

Still, no one knows how many defendants have been wrongly convicted because the existence of flawed testimony — often just one element of a prosecution — does not establish innocence.

"What it does mean is that those cases need to be looked at very closely to see what role hair played in the case," said Norman Reimer, executive

director of the National Association of Criminal Defense Lawyers.

Advocates said they are working to ensure that individuals potentially affected have opportunities to challenge their convictions. They've also encouraged states to do their own audits because most of the prosecutions were local cases. The Justice Department has said it will waive procedural objections, including statute-of-limitations claims, in federal cases.

Odom, 52, always maintained his innocence, saying he was home asleep at the time the assault occurred. But the hair evidence and eyewitness identification proved persuasive, and Odom spent more than 20 years in prison before being released on parole in 2003.

The big break came when the Public Defender Service for the District of Columbia, which has focused attention on the flawed science and ultimately established Odom's innocence, reopened his case following the earlier exoneration of another local man because of faulty hair evidence.

DNA testing on evidence pulled from storage showed that the hair on the woman's garment could not have come from Odom. The conviction was thrown out — a relief for a man who had been a registered sex offender and whose travel was hampered.

When the call came that he'd been cleared, Odom was on a nighttime plumbing job, "and I just yelled out in happiness. It was a very joyful moment."

**EXHIBIT E**

# Judge: Bad science led to murder-by-arson verdict

Associated Press

The arsonist who killed Ji Yun Lee was especially cruel and calculating, clousing her small cabin in Pennsylvania's Pocono Mountains with more than 60 gallons of gasoline and heating fuel and setting at least eight fires, ending at the front door to block any chance of escape. Then he watched calmly as the cabin turned into an inferno.

That was the prosecutor's case against the victim's father, Han Tak Lee, and it persuaded a jury to convict the South Korean immigrant of first-degree murder. He's serving life without parole.

But the arson science underlying his conviction turned out to be all wrong.

This month - nearly 25 years after the blaze - federal magistrates recommended Lee should either be given a new trial or released from prison outright. A federal judge must approve the recommendation, and prosecutors are expected to file papers this week arguing that Lee's conviction should stand.

His case is one of dozens around the country to come under scrutiny because of errors reached but now-discredited beliefs about how arson can be detected. The Arson Research Project at Monterey College of Law in California highlighted at least 31 convictions based at least partly on debunked fire investigations, including that of a Texas man executed in 2004, and experts believe there are many more.

"There was just no science behind" the old assumptions about arson, said Paul Gates of The Innocence Project, a group that works to overturn wrongful

convictions, primarily through the use of DNA. "A lot of this was just guesswork and voodoo."

Lee, now 79, has consistently maintained his innocence.

A clothing store owner in New York City, Lee took his volatile, mentally ill 20-year-old daughter to a northeastern Pennsylvania religious retreat at the suggestion of the family pastor. Early July 29, 1989, the cabin they shared became engulfed in flames. Lee escaped, but his daughter's body was found in the ashes, curled in the fetal position.

When firefighters showed up, they found Lee sitting socially on a bench outside the cabin. Inside the wreckage were clues that led authorities to suspect foul play.

At the time, investigators were taught unseasonably hot and intense fires indicated the use of an accelerator and that arson could be confirmed by the presence of deep charring or shiny blistering of wood as well as "crazed glass," tiny fractures in windows.

Research conducted in the 1980s debunked these and other notions about arson. By 1992, the National Fire Protection Association published new standards to guide fire investigations.

But acceptance did not come right away.

"Most arson investigators' heads exploded, and they just went nuts for the next seven or eight years trying to discredit that document," said John Latham, one of the nation's leading experts in fire analysis and a defense consultant for Lee.

At Lee's trial, a fire marshal and other prosecution experts said the physical evidence over-



In a Sept. 6, 1989, photo, Han Tak Lee is led to the Swiftwater State Police barracks for processing with State Police Fire Marshal Thomas Jones, right, and Stroud Township Police Investigator Vernon Bortz.

whelmingly pointed to arson. In addition to the halflife burn patterns, they said, testing revealed accelerants on Lee's shirt, pants and a rug found in the cabin.

Lee's attorney didn't challenge the arson finding, arguing instead the fire was set by Lee's troubled daughter to commit suicide. The jury didn't buy it.

A quarter-century later, U.S. Magistrate Judge Martin Carlson said scientific progress had invalidated the conviction. "Over the past two decades, there has been a revolution in

fire science," he wrote June 13. "It is a revolution that has toppled old orthodoxies and cast into doubt longstanding assumptions regarding fire scene analysis."

Monroe County prosecutors concede the point but say other evidence points to Lee's guilt, including the accelerants found on his clothing.

But that evidence, too, has been "substantially undermined" by new testing, Carlson said. And Lee's tranquil demeanor at the fire scene - a

powerful bit of circumstantial evidence that helped sway the jury - might have stemmed from a cultural taboo against showing emotion in public, the magistrate said, not from a lack of feeling.

He said justice dictates throwing out Lee's conviction and sentence.

"Sometimes, with the benefit of insight gained over time, we learn that what was once regarded as truth is myth, and what was once accepted as science is superstition," Carlson

wrote. "So it is with this case."

Kyung Sohn of New York City, who heads the National Committee to Free Han Tak Lee, said he got letters from his old friend Thursday, nearly a week after Carlson's decision. Sohn said Lee, who has been in poor health, hopes to soon reclaim his reputation as well as his freedom.

"He mentioned that God is with me, that I am innocent," Sohn said. "In my thinking, 99.99 percent he will be free. We pray every day."

# EXHIBIT F

# Murder conviction nixed in 'junk science' bite mark case

By JOE MANTAW  
Associated Press

PITTSBURGH - A judge on Thursday overturned a woman's murder conviction and prison sentence after a bite mark expert who testified against her at trial said he now believes his findings were "junk science."

Payette County Judge John Wagner ruled in the case of 38-year-old Crystal Dawn Weimer, of Connellsville, after a brief hearing about 40 miles south of Pittsburgh. Weimer has repeatedly insisted she's innocent in the 2001 beating death of 21-year-old Curtis Haith.

She was convicted of third-degree murder in 2006 and sentenced to 15 to 30 years in prison. A man imprisoned in the case had testified that Weimer helped lure Haith to the scene. A dental expert, Dr. Constantine Karazulas, testified that a bite on the victim's hand matched Weimer.

But the witness who placed Weimer at the scene has since recanted, and the dentist changed his mind, too.

The National Academy of Science in 2009 issued a report discrediting bite mark evidence as an inexact way to match defendants to bite wounds.

Marissa Bluestine, legal director of the Pennsylvania Innocence Project, which is representing Weimer, said the report was Karazulas' "epiphany" and "he independently went back and reviewed his findings."

Karazulas concluded that bite marks can be used to eliminate someone as a suspect, not to conclusively match them, Bluestine said.

The dentist was traveling after the hearing and didn't immediately return a message relayed through his Bridgeport, Conn., office.

Weimer's attorneys won't let her comment because she remains charged in Haith's death, Bluestine said.

By law, District Attorney Jack Heneks Jr. has 120 days to decide whether to retry Weimer. The prosecutor didn't immediately return a call for comment, and the assistant who handled the

hearing referred questions to Heneks.

The judge ruled that Weimer can be released on unsecured bond - meaning she doesn't have to post bail money - as long as she's monitored with an electronic bracelet. That will take state prison officials a few days to set up, so Weimer remains at a women's prison in Cambridge Springs.

She was originally charged after an ex-boyfriend told authorities she confessed. The charges were dropped when he recanted but were refiled after Joseph Stenger, of Everson, pleaded guilty in 2004 to his role in Haith's death.

Stenger pleaded guilty to criminal conspiracy to commit criminal homicide and is serving nine to 18 years in prison. Prosecutors dropped more serious charges against Stenger because he agreed to testify against Weimer.

Stenger claimed Weimer and two black men went to Haith's home, and she lured Haith outside so Stenger and the others could beat him with a baseball bat and crowbar.

Stenger has since given a sworn statement saying he falsely implicated her and the black suspects don't exist.

"He explained that where he is from, whenever something bad happens, they say, 'The black guy did it,'" according to the investigator who took Stenger's sworn statement. "Stenger said he is not a racist, but that's just what people do."

# EXHIBIT G

Public Safety

## **FBI notifies crime labs of errors used in DNA match calculations since 1999**

By Spencer S. Hsu May 29

The FBI has notified crime labs across the country that it has discovered errors in data used by forensic scientists in thousands of cases to calculate the chances that DNA found at a crime scene matches a particular person, several people familiar with the issue said.

The bureau has said it believes the errors, which extend to 1999, are unlikely to result in dramatic changes that would affect cases. It has submitted the research findings to support that conclusion for publication in the July issue of the *Journal of Forensic Sciences*, the officials said.

But crime labs and lawyers said they want to know more about the problem before conceding it would not make much difference in any given case.

"The public puts so much faith in DNA testing that it makes it especially important to make those the best estimates possible," said Wright State University statistics professor Daniel R. Krane, an expert whose work has been cited by defense attorneys. "There is no excuse for a systematic error to many thousands of calculations in such a context."

Krane, who identified errors 10 years ago in the DNA profiles the FBI analyzed to generate the population statistics data, called the consequences of the disclosure appalling, saying the data has been used in tens of thousands or hundreds of thousands of cases worldwide in the past 15 years. He said when he flagged the problems a decade ago, the FBI downplayed his findings.

The issue centers on the FBI's "Pop stats," which are built into the software programs used by 9 in 10 U.S. labs and many overseas, Krane said.

While juries might well reach the same decision if errors mean that an individual has a 1-in-a-billion chance of matching a crime scene sample instead of 1 in 10 billion, for example, that may not be so if

errors were to halve, say, assertions that person had a 1-in-180 chance of matching, as Krane said came up in a case that he testified in last week.

Such low ratios are increasingly common as state and local labs analyze smaller and smaller traces of DNA found on objects such as guns or countertops — known as “low-copy” and “touch DNA” — and often are sifting through DNA mixtures, or profiles contributed by multiple people.

Stephen Mercer, chief of the forensic division of Maryland’s Office of the Public Defender, said his office on Wednesday notified its attorneys about the issue and suggested they consider asking prosecutors about such problems in cases involving DNA evidence.

“The prediction that the errors are likely to have a nominal impact has to be assessed by the defense in the individual circumstances of each particular case,” Mercer said.

In a bulletin sent to crime labs, the FBI said the problem stemmed from “clerical mistakes in transcriptions of the genotypes and to limitations of the old technology and software.”

The disclosure comes as some private researchers and lawyers in recent years questioned whether errors in the FBI’s national database of 13 million DNA profiles may have led judges and juries to give undue weight to DNA matches, long considered the “gold standard” in forensic science. They have called on the government to open the database for private research.

Crime lab analysts in the United States generally develop a DNA profile by analyzing 13 or more specific locations on chromosomes, called loci, for specific markers that appear at different frequencies in a given population. Match probabilities are derived by calculating the likelihood of a person sharing the same markers at each point.

The FBI is preparing to transition to using more than 20 loci, which theoretically should significantly improve the accuracy of results and allay concerns about the population statistics it used to generate those frequencies, officials said.

With new commercial test kits available using more loci, the FBI commissioned a study that re-tested DNA samples used for its original work and uncovered the errors.

“We are of the view that these discrepancies are unlikely to materially affect any assessment of evidential value,” the FBI stated in its May 11 bulletin to crime labs, according to a person who has a copy.



"However, given that statistics based on these data have been included in thousands of lab reports and in testimonies, we believe the discrepancies require acknowledgment."

In a public statement late Friday, the FBI said it found errors in 33 of 1,100 profiles used, or 3 percent. The FBI added that the DNA community has cautioned that match probabilities should be viewed as varying by a factor of 10, saying, "Though these discrepancies are within the internationally accepted range, the FBI is committed to correcting the inaccurate values in a transparent manner."

The FBI has prepared a letter to the editor to be published by the Journal of Forensic Sciences, which originally published the bureau's study 16 years ago.

David Coffman, chairman of the accreditation arm of the American Society of Crime Lab Directors, said it would be premature to comment on the significance of the errors until the FBI releases more data.

"They said it would be very minor," said Coffman, who is director of forensic services for the Florida Department of Law Enforcement in Tallahassee. "We are waiting to see the journal article to see which [data] would be affected, so we could evaluate it."

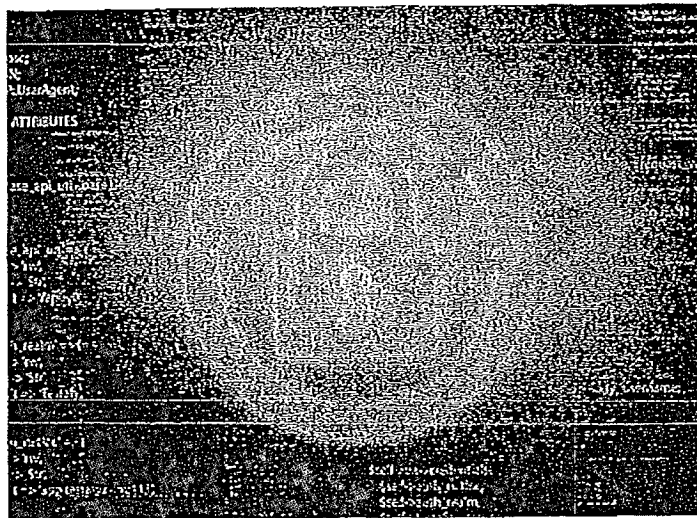
In a statement, the National District Attorneys Association applauded the "transparent and responsible manner in which the FBI has disclosed this internal finding," adding that "notification to all interested parties is an excellent first step in addressing this issue."

Spencer S. Hsu is an investigative reporter, two-time Pulitzer finalist and national Emmy award nominee.

# EXHIBIT H

## Convicted by Code

By Rebecca Wexler



Defendants don't always have the ability to inspect the code that could help convict them.

Image by M. Treason/Shutterstock

Secret code is everywhere—in elevators, airplanes, medical devices. By refusing to publish the source code for software, companies make it impossible for third parties to inspect, even when that code has enormous effects on society and policy. Secret code risks security flaws that leave us vulnerable to hacks and data leaks. It can threaten privacy by gathering information about us without our knowledge. It may interfere with equal treatment under law if the government relies on it to determine our eligibility for benefits or whether to put us on a no-fly list. And secret code enables cheaters and hides mistakes, as with Volkswagen: The company admitted recently that it used covert software to cheat emissions tests for 11 million diesel cars spewing smog at 40 times the legal limit.

But as shocking as Volkswagen's fraud may be, it only heralds more of its kind. It's time to address one of the most urgent if overlooked tech transparency issues—secret code in the criminal justice system. Today, closed, proprietary software can put you in prison or even on death row. And in most U.S. jurisdictions you still wouldn't have the right to inspect it. In short, prosecutors have a Volkswagen problem.

Advertisement

Take California. Defendant Martell Chubbs currently faces murder charges for a 1977 cold case in which the only evidence against him is a DNA match by a proprietary computer program. Chubbs, who ran a small home-repair business at the time of his arrest, asked to inspect the software's source code in order to challenge the accuracy of its results. Chubbs sought to determine whether the code properly implements established scientific procedures for DNA matching and if it operates the way its manufacturer claims. But the manufacturer argued that the defense attorney might steal or duplicate the code and cause the company to lose money. The court denied Chubbs' request, leaving him free to examine the state's expert witness but not the tool that the witness relied on. Courts in Pennsylvania, North Carolina, Florida, and elsewhere have made similar rulings.

We need to trust new technologies to help us find and convict criminals but also to exonerate the innocent. Proprietary software interferes with that trust in a growing number of investigative and forensic devices, from DNA testing to facial recognition software to algorithms that tell police where to look for future crimes. Inspecting the software isn't just good for defendants, though—disclosing code to defense experts helped the New Jersey Supreme Court confirm the scientific reliability of a breathalyzer.

Short-circuiting defendants' ability to cross-examine forensic evidence is not only unjust—it paves the way for bad science. Experts have described cross-examination as “the greatest legal engine ever invented for the discovery of truth.” But recent revelations exposed an epidemic of bad science undermining criminal justice. Studies have disputed the scientific validity of pattern matching in bite marks, arson, hair and fiber, shaken baby syndrome diagnoses, ballistics, dog-scent lineups, blood spatter evidence, and fingerprint matching. Massachusetts is struggling to handle the fallout from a crime laboratory technician's forgery of results that tainted evidence in tens of thousands of criminal cases. And the Innocence Project reports that bad forensic science contributed to the wrongful convictions of 47 percent of exonerees. The National Academy of Sciences has blamed the crisis in part on a lack of peer review in forensic disciplines.

Nor is software immune. Coding errors have been found to alter DNA likelihood ratios by a factor of 10, causing prosecutors in Australia to replace 24 expert witness statements in criminal cases. When defense experts identified a bug in breathalyzer software, the Minnesota Supreme Court barred the affected test from evidence in all future trials. Three of the state's highest justices argued to admit evidence of additional alleged code defects so that defendants could challenge the credibility of future tests.

Cross-examination can help to protect against error—and even fraud—in forensic science and tech. But for that “legal engine” to work, defendants need to know the bases of state claims. Indeed, when federal district Judge Jed S. Rakoff of Manhattan resigned in protest from President Obama's commission on forensic sciences, he warned that if defendants lack access to information for cross-examination, forensic testimony is “nothing more than trial by ambush.”

Rakoff's warning is particularly relevant for software in forensic devices. Because eliminating errors from code is so hard, experts have endorsed openness to public scrutiny as the surest way to keep software secure. Similarly, requiring the government to rely exclusively on open-source forensic tools would crowd-source cross-examination of forensic device software. Forensic device manufacturers, which sell exclusively to government crime laboratories, may lack incentives to conduct the obsessive quality testing required.

To be sure, government regulators currently conduct independent validation tests for at least some digital forensic tools. But even regulators may be unable to audit the code in the devices they test, instead merely evaluating how these technologies perform in controlled laboratory environments. Such “black box” testing wasn't enough for the Environmental Protection Agency to catch Volkswagen's fraud, and it won't be enough to guarantee the quality of digital forensic technologies, either.

The Supreme Court has long recognized that making criminal trials transparent helps to safeguard public trust in their fairness and legitimacy. Secrecy about what's under the hood of digital forensic devices casts doubt on this process. Criminal defendants facing incarceration or death should have a right to inspect the secret code in the devices used to convict them.

*Future Tense is a partnership of Slate, New America, and Arizona State University.*

NEWS & POLITICS

TODAY IN SLATE

# EXHIBIT I

Alberto R. Gonzales

# TOO MUCH GOES WRONG WITH JUSTICE

## Exoneration rise must spur forensic science reform, tougher oversight

When I served as general counsel to then-Texas Gov. George W. Bush, I had to tell a rape victim who had been assaulted in her bed at knife point while her daughter slept a foot away that she was wrong. New DNA evidence showed that the man she identified could not have been guilty. Based on her testimony and invalidated forensic testing, a man spent 12 years of a life sentence behind bars.

That story is not rare. According to the National Registry of Exonerations updated last week, 149 convicted defendants were exonerated last year in 29 states, and other U.S. jurisdictions, a record. One mistake is too many, a miscarriage of justice for the person wrongly incarcerated.

At the same time, it is also a miscarriage of justice for victims like the one who sat in my office in 1997. For them, the guilty have gone free.

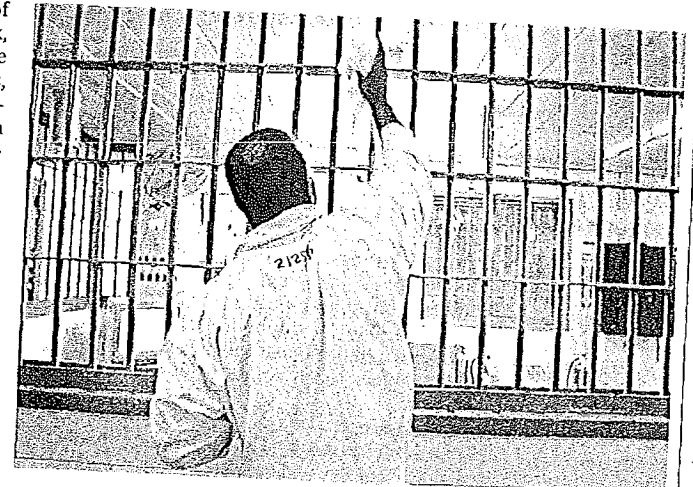
Among my many responsibilities as attorney general of the United States was to do everything in my power to ensure that justice remains blind and is dispensed without regard to skin color or ZIP code. I support tough justice, but to be justice at all, only the guilty must be punished. My experience and growing data on exonerations reveal a troubling picture of American justice today, one that requires action.



Forensic science, which we have long relied upon to determine guilt or innocence in this country, is not as solid a foundation as we thought. Subjective, pattern-based forensic techniques such as bite mark, hair comparison and even fingerprint analysis might not have sufficient scientific foundation. Even certain types of DNA analysis are now open to reasonable questions about their ability to connect an individual to a crime.

A National Academy of Sciences report warns that there is insufficient training and education of researchers and crime scene technicians and no meaningful reliability testing to explain the limits of these disciplines. Last spring, the FBI acknowledged that for two decades, examiners in an FBI forensic unit gave flawed testimony in virtually every trial in which they offered evidence. Convictions are now being re-examined.

Legislation to help address concerns over forensic science, by



According to a national registry, 149 convicted defendants were exonerated last year in the USA, a record. DANNY JOHNSTON, AP

mandating uniform standards and accreditation for crime labs, is stalled in a Senate turf battle. Congress, law enforcement, the defense bar and the scientific community must work together to end this logjam.

Flawed science is not the only source of wrongful convictions. The police and prosecutors deserve our gratitude for putting their lives and reputations on the line every day, but law enforcement and prosecutorial misconduct are also a factor.

Occasionally, a police officer or a prosecutor makes a mistake, and exculpatory evidence is tainted, destroyed or misplaced. Mistakes can be reduced with more training and supervision.

The record of past exonerations makes clear that intentional acts to destroy or withhold evidence are not unheard of. Such acts must be met with a swift and sure response. If an officer or prosecutor intentionally does something wrong, that person should be held accountable. No responsible law enforcement official wants to serve with those who do not abide by the law, but the current disciplinary system is not doing enough.

Finally, there is money's outsized role. A person with means is able to immediately hire a lawyer

who can help secure bail and negotiate with a prosecutor for a faster and more favorable resolution, while a person without means cannot. Often, those accused and without resources cannot wait for a court-appointed lawyer because spending time in jail can cost their job. They can be forced to plead guilty though they have not committed a crime. If we are serious about equal justice, we need to provide access to counsel earlier in the process.

As the National Registry report points out, a few prosecutors have set up conviction integrity units within their offices to prevent and remedy false convictions. While some of these efforts have been successful, others have not. More must be done.

We must be committed to finding solutions to this serious problem if we hope to preserve trust in our criminal justice system.

We owe it to those we have put in prison for crimes they did not commit. And we owe it to the victims, like the one I met with nearly two decades ago. They deserve to see the guilty face justice.

*Alberto R. Gonzales, the attorney general and White House counsel in the George W. Bush administration, is the dean at Belmont University College of Law.*

GANNETT

# **EXHIBIT J**



**COUNTY OF ALLEGHENY**  
**OFFICE OF THE MEDICAL EXAMINER**

1520 PENN AVENUE • PITTSBURGH, PENNSYLVANIA 15222  
 PHONE (412) 350-4800  
 EMAIL webmaster.me@alleghenycounty.us



ASCLD/LAB ACCREDITED LAB  
 SINCE 2008

ABDULREZAK SHAKIR, M.D.  
 DEPUTY MEDICAL EXAMINER

KARL E. WILLIAMS, M.D., M.P.H.  
 MEDICAL EXAMINER

ROBERT HUSTON  
 DIRECTOR OF LABORATORIES

**CONFIDENTIAL**

Submitted herewith please find the confidential Report of Laboratory Findings of this laboratory's examination conducted in connection with the following case:

Lab Case No. Report No.:	Case Name	Report Date
Case Type		
13LAB04205 Report #8:	Lawrence Short	January 13, 2014
HOMICIDE		
Agency	Agency Case No.	Case Officer
ALLEGHENY COUNTY POLICE	13-0580	L. FERGUSON, V. COSTA
ALLEGHENY COUNTY	13COR03403	
MEDICAL EXAMINER		

Victim(s)  
 Lawrence Short  
 Tyrone Coleman

Suspect(s)	OTN
MICHAEL ROBINSON	G5935296
GLEN SMITH JR	G5935204

The Crime Lab User Fee: \$4,000.00

**IMPORTANT NOTICE**

The Division of Laboratories must be notified when an OTN becomes available for the suspect(s) / defendant(s) in this case. Please call (412) 350-3734 or FAX (412) 350-3861 this information immediately.





COUNTY OF ALLEGHENY  
 OFFICE OF THE MEDICAL EXAMINER  
 DIVISION OF FORENSIC LABORATORIES



ASCLD/LAB ACCREDITED LAB  
 SINCE 2008

REPORT of LABORATORY FINDINGS

Agency Case No.      Case Name  
 13-0580                      Lawrence Short

Laboratory Case No.  
 13LAB04205 Report #8

**FORENSIC BIOLOGY SECTION REPORT**  
**Report of PCR-STR Analysis**

**Items Received:**

The following items were submitted:

<u>Extract</u>	<u>Item #</u>	<u>Description</u>
1304205_12A1A	12A1	Swabbing of grip, magazine release, slide serrations and hammer of Ruger
1304205_13B1	13B	Swab, interior surface of hatband and underside of brim of Atlanta Braves hat
1304205_53A1	53A	Tape lift, black bandana
1304205_44A1	44A	Whole blood of Lawrence Short
1304206_10A1	10A	Whole blood of Tyrone Coleman
1304206_26A1	26A	Buccal collector from Michael Robinson
1304206_27A1	27A	Buccal collector from Glen Smith Jr.

**Results:**

DNA was isolated from the items listed above. DNA from each of the items was amplified using PCR technology and typed for Amelogenin and the following 15 genetic loci: D3S1358, TH01, D21S11, D18S51, Penta E, D5S818, D13S317, D7S820, D16S539, CSF1PO, Penta D, vWA, D8S1179, TPOX and FGA. The PowerPlex® 16 System was used in the analysis. The types detected for each sample can be found in the attached table.

**Conclusions:**

*Whole blood of Tyrone Coleman*

The data indicated that a DNA mixture profile of three or more individuals was obtained from the whole blood of Tyrone Coleman. This sample is unsuitable for use as a reference sample, and was not used for comparison purposes for the samples listed below.

*Swabbing of grip, magazine release, slide serrations and hammer of Ruger*

The data indicated that one allele was detected above this laboratory's interpretational threshold at one of the fifteen STR loci tested (TPOX) from the swabbing of various areas of the Ruger. There is insufficient data in this sample for comparison purposes.

*Swab, interior surface of hatband and underside of brim of Atlanta Braves hat*

The data indicated that a single source DNA profile was obtained from the swab of the interior surface of the hatband and underside of the brim of the Atlanta Braves hat. The DNA profile obtained from this sample matches the DNA profile obtained from the buccal collector of Glen Smith Jr. at each of the 15 tested STR loci. Michael Robinson and Lawrence Short are excluded as contributors of the DNA profile obtained from this sample.



COUNTY OF ALLEGHENY . .  
 OFFICE OF THE MEDICAL EXAMINER  
 DIVISION OF FORENSIC LABORATORIES  
 REPORT of LABORATORY FINDINGS



ASCLD/LAB ACCREDITED LAB  
 SINCE 2008

Agency Case No. 13-0580      Case Name Lawrence Short

Laboratory Case No. 13LAB04206 Report #8

**FORENSIC BIOLOGY SECTION REPORT**

The probability of randomly selecting an unrelated individual whose DNA profile matches the DNA profile obtained from the swab of the interior surface of the hatband and underside of the brim of the Atlanta Braves hat is approximately:

<u>Database</u>	<u>Frequency</u>
Caucasian	1 in $3 \times 10^{24}$
African American	1 in $68 \times 10^{18}$
Hispanic	1 in $404 \times 10^{21}$

*Tape lift, black bandana*

The data indicated that a DNA mixture profile of three or more individuals was obtained from the tape lift of the black bandana. Lawrence Short and Glen Smith Jr. are excluded as possible contributors to the mixture profile obtained from this sample.

Due to the complexity of the mixture, no conclusions could be made at this time concerning Michael Robinson as a possible contributor to the mixture profile obtained from this sample. More information may be obtained through methods employing probabilistic genotyping. If more information is required, arrangements can be made to transfer the data to a qualified company that uses these methods.

**CODIS Eligibility**

The following sample has met eligibility requirements, will be entered into the CODIS database, and searched on a weekly basis:

Item 13B      Swab, interior surface hatband and underside of brim of Atlanta Braves hat

The following samples have not met eligibility requirements and will not be entered into the CODIS database:

- Item 12A1      Swabbing of grip, magazine release, slide serrations and hammer of Ruger
- Item 53A      Tape lift, black bandana
- Item 44A      Whole blood of Lawrence Short
- Item 10A      Whole blood of Tyrone Coleman
- Item 26A      Buccal collector from Michael Robinson
- Item 27A      Buccal collector from Glen Smith Jr.

**Disposition of Evidence:**

The evidence samples processed for DNA analysis and sample extracts will be retained in this laboratory in the absence of further direction.



COUNTY OF ALLEGHENY  
OFFICE OF THE MEDICAL EXAMINER  
DIVISION OF FORENSIC LABORATORIES

REPORT of LABORATORY FINDINGS



ASCLD/LAB ACCREDITED LAB  
SINCE 2008

Agency Case No.  
13-0580

Case Name  
Lawrence Short

Laboratory Case No.  
13LAB04205 Report #8

FORENSIC BIOLOGY SECTION REPORT

Respectfully submitted,

Anita K. Kozy  
Scientist

The results, conclusions, interpretations and/or opinions in this Report of Laboratory Findings are those of the above signed author.



COUNTY OF ALLEGHENY  
OFFICE OF THE MEDICAL EXAMINER  
DIVISION OF FORENSIC LABORATORIES



ASCLD/LAB ACCREDITED LAB  
SINCE 2008

REPORT of LABORATORY FINDINGS

Agency Case No. 13-0580  
Case Name Lawrence Short

Laboratory Case No. 13LAB04205 Report #8

FORENSIC BIOLOGY SECTION REPORT  
PowerPlex® 16 Table

Extract	Item	Description	D3S1358	TH01	D21S11	D18S51	Penta E
1304205_12A1A	12A1	Swabbing of various areas of Ruger	NR	NR	NR	NR	NR
1304205_13B1	13B	Swab, interior surface of hatband and underside of brim of Atlanta Braves hat	17	6,9	27,31	16,18	7,8
1304205_53A1	53A	Tape lift, black bandana	15,16,17	7,8,9,3	28,30,2,33,2	13,16,19	9,11,13,14
1304205_44A1	44A	Whole blood of Lawrence Short	15	6,8	30,33	13,17	8,17
1304206_10A1	10A	Whole blood of Tyrone Coleman	16,17,+	7,+	28,29	15,17,+	8,11
1304206_26A1	26A	Buccal collector from Michael Robinson	15	7	28,33,2	13,19	9,11
1304206_27A1	27A	Buccal collector from Glen Smith Jr.	17	6,9	27,31	16,18	7,8

Extract	Item	Description	D5S818	D13S317	D7S820	D16S539	CSF1PO	Penta D
1304205_12A1A	12A1	Swabbing of various areas of Ruger	NR	NR	NR	NR	NR	NR
1304205_13B1	13B	Swab, interior surface of hatband and underside of brim of Atlanta Braves hat	13	11,12	8,9	9	10,12	8,11,(+)
1304205_53A1	53A	Tape lift, black bandana	10,12	9,12,+	9,10,11	8,9,11,12,13	8,10,11,12	9,11,13
1304205_44A1	44A	Whole blood of Lawrence Short	11,12	11,12	9,11	13	11,12	2,2,7
1304206_10A1	10A	Whole blood of Tyrone Coleman	11,12,14	11,12,13,+	10,11,12	9,11,12,13	10,11,+	11,+
1304206_26A1	26A	Buccal collector from Michael Robinson	10,12	12,13	9,10	8,13	8,12	9,11
1304206_27A1	27A	Buccal collector from Glen Smith Jr.	13	11,12	8,9	9	10,12	8,11

Extract	Item	Description	Amelogenin	vWA	D8S1179	TPOX	FGA
1304205_12A1A	12A1	Swabbing of various areas of Ruger	X	NR	NR	9	NR
1304205_13B1	13B	Swab, interior surface of hatband and underside of brim of Atlanta Braves hat	X,Y	14,15	13,14	7,9	23,24
1304205_53A1	53A	Tape lift, black bandana	X,Y	17,18,+	13,14	8,11	22,23,25,+
1304205_44A1	44A	Whole blood of Lawrence Short	X,Y	14,19	13,15	7,10	21,24
1304206_10A1	10A	Whole blood of Tyrone Coleman	X,Y	17,+	12,13,15	8,11	24,25,+
1304206_26A1	26A	Buccal collector from Michael Robinson	X,Y	17	13,14	8,11	25
1304206_27A1	27A	Buccal collector from Glen Smith Jr.	X,Y	14,15	13,14	7,9	23,24

Results do not reflect intensity differences. Allele frequencies compiled from Pennsylvania State Police Database STR3.

The results in parentheses may be due to the presence of DNA from more than one individual or to technical artifacts and therefore were not interpreted.  
+ One or more minor alleles were detected below the laboratory's interpretational threshold.

**EXHIBIT K**



# Cybergenetics

160 North Craig Street, Suite 210  
Pittsburgh, PA 15213  
Tel: (412) 683-3004  
Fax: (412) 683-3005

February 5, 2014

TO: CHIEF TRIAL DEPUTY DANIEL FITZSIMMONS  
ALLEGHENY COUNTY DISTRICT ATTORNEY'S OFFICE  
PITTSBURGH, PA 15219

SUPPLEMENTAL REPORT  
Cybergenetics: ACDA15  
*Allegheny County Case Numbers*  
Police: 13-0580  
Medical Examiner: 13COR03403  
Crime Laboratory: 13LAB04205

Victims: COLEMAN, Tyrone  
SHORT, Lawrence

Suspects: ROBINSON, Michael  
SMITH JR, Glen

Evidence Items:

Item 53A	Tape lift, black bandana
Item 26A	Buccal collector from Michael Robinson
Item 27A	Buccal collector from Glen Smith Jr.
Item 44A	Whole blood of Lawrence Short

METHODS:

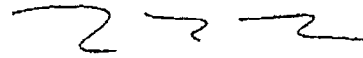
- The DNA PowerPlex<sup>®</sup> 16 data profiles referenced in this report were previously developed and addressed in a Report of Laboratory Findings issued by the Allegheny County Office of the Medical Examiner.
- The TrueAllele<sup>®</sup> Casework system processed each evidence item in independent replicate computer runs to infer possible DNA contributor genotypes from the samples.
- The DNA match statistics calculated herein used the population allele frequencies generated by the Pennsylvania State Police, and a theta value (co-ancestry coefficient) of 1%.
- All evidence genotypes were compared with all reference genotypes to compute likelihood ratio (LR) DNA match statistics. When there was no statistical support for a match, that comparison was not listed in this report.

RESULTS:

TrueAllele assumed that the evidence sample data (Item 53A) contained two or three unknown contributors, and objectively inferred evidence genotypes solely from these data. Degraded DNA was considered. Following genotype inference, the computer then compared a genotype from this evidence item to provided reference (Items 26A, 27A and 44A) genotypes, relative to reference populations, to compute LR DNA match statistics. Based on these results:

Cybergenetics ACDA15  
Police 13-0580, Medical Examiner 13COR03403, Crime Laboratory 13LAB04205  
February 5, 2014

A match between the black bandana (Item 53A) and Michael Robinson (Item 26A) is:  
2 billion times more probable than a coincidental match to an unrelated Black person,  
1.49 billion times more probable than a coincidental match to an unrelated Caucasian person, and  
2.99 billion times more probable than a coincidental match to an unrelated Hispanic person.



Mark W. Perlin, PhD, MD, PhD  
Chief Scientific Officer, Cybergenetics

## Appendix

### *Computer interpretation of DNA evidence*

A definite genotype can be determined when a person's DNA produces unambiguous data. However, when the data signals are less definitive, or when there are multiple contributors to the evidence, uncertainty arises. This uncertainty is expressed in the resulting genotype, which may describe different genetic identity possibilities. Such genotype uncertainty may translate into reduced identification information when a comparison is made with a suspect.

The DNA identification task can thus be understood as a two-step process:

1. objectively *inferring genotypes* from evidence data, accounting for allele pair uncertainty using probability, and
2. subsequently *matching genotypes*, comparing evidence with a suspect relative to a population, to express the strength of association using probability.

The match strength is reported as a single number, the likelihood ratio (LR), which quantifies the change in identification information produced by having examined the DNA evidence.

The TrueAllele<sup>®</sup> Casework system is a computer implementation of this two-step DNA identification inference approach. The computer objectively infers genotypes from DNA data through statistical modeling, without reference to a known comparison genotype. To preserve the identification information present in the data, the system represents genotype uncertainty using probability. These probabilistic genotypes are stored on a relational database. Subsequent comparison with suspects provides evidentiary identification information.

Many TrueAllele<sup>®</sup> validation studies have been conducted to establish the reliability of the method. Four of these studies have been published in peer-reviewed scientific journals, on both synthetic [1, 2] and casework [3, 4] data. Conducting such validations is consistent with the 2010 SWGDAM interpretation guidelines (paragraph 3.2.2).

### *References*

1. Perlin MW, Sinenikov A. An information gap in DNA evidence interpretation. *PLoS ONE*. 2009;4(12):e8327.
2. Ballantyne J, Hanson EK, Perlin MW. DNA mixture genotyping by probabilistic computer interpretation of binomially-sampled laser captured cell populations: Combining quantitative data for greater identification information. *Sci Justice*. 2013;53(2):103-114.
3. Perlin MW, Legler MM, Spencer CE, et al. Validating TrueAllele<sup>®</sup> DNA mixture interpretation. *J Forensic Sci*. 2011;56(6):1430-1447.
4. Perlin MW, Belrose JL, Duceman BW. New York State TrueAllele<sup>®</sup> Casework validation study. *J Forensic Sci*. 2013;58(6):1458-1466.







## Cybergenetics

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March 13, 2015

TO: CHIEF TRIAL DEPUTY DANIEL FITZSIMMONS  
ALLEGHENY COUNTY DISTRICT ATTORNEY'S OFFICE  
PITTSBURGH, PA 15219

**SUPPLEMENTAL REPORT**  
Cybergenetics: ACDA15  
*Allegheny County Case Numbers*  
Police: 13-0580  
Medical Examiner: 13COR03403  
Crime Laboratory: 13LAB04205

Victims: COLBMAN, Tyrone  
SHORT, Lawrence

Suspects: ROBINSON, Michael  
SMITH JR, Glen

#### Evidence Items:

Item 53A	Tape lift, black bandana
Item 26A	Buccal collector from Michael Robinson
Item 27A	Buccal collector from Glen Smith Jr.
Item 44A	Whole blood of Lawrence Short

#### METHODS:

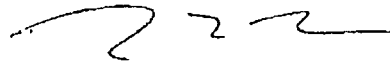
- The DNA PowerPlex<sup>®</sup> 16 data profiles referenced in this report were previously developed and addressed in a Report of Laboratory Findings issued by the Allegheny County Office of the Medical Examiner.
- The TrueAllele<sup>®</sup> Casework system processed each evidence item in independent replicate computer runs to infer possible DNA contributor genotypes from the samples.
- The DNA match statistics calculated herein used the population allele frequencies generated by the Pennsylvania State Police, and a theta value (co-ancestry coefficient) of 1%, using VUIter<sup>™</sup> version 3.3.5333.1 (30-May-2014).
- All evidence genotypes were compared with all reference genotypes to compute likelihood ratio (LR) DNA match statistics. When there was no statistical support for a match, that comparison was not listed in this report.

#### RESULTS:

TrueAllele assumed that the evidence sample data (Item 53A) contained two or three unknown contributors, and objectively inferred evidence genotypes solely from these data. Degraded DNA was considered. Following genotype inference, the computer then compared genotypes from this evidence item to provided reference (Items 26A, 27A and 44A) genotypes, relative to reference populations, to compute LR DNA match statistics. Based on these results:

Cybergentics: ACDA15  
Police 13-0580, Medical Examiner 13COR03403, Crime Laboratory 13LAB04205  
March 13, 2015

A match between the black bandana (Item 53A) and Michael Robinson (Item 26A) is:  
5.7 billion times more probable than a coincidental match to an unrelated Black person,  
3.68 billion times more probable than a coincidental match to an unrelated Caucasian person, and  
7.67 billion times more probable than a coincidental match to an unrelated Hispanic person.



Mark W. Perlin, PhD, MD, PhD  
Chief Scientific Officer, Cybergentics

## TrueAllele® Casework Method

### *Computer Interpretation of DNA Evidence*

A definite genotype can be determined when a person's DNA produces unambiguous data. However, when the data signals are less definitive, or when there are multiple contributors to the evidence, uncertainty arises. This uncertainty is expressed in the resulting genotype, which may describe different genetic identity possibilities. Such genotype uncertainty may translate into reduced identification information when a comparison is made with a suspect.

The DNA identification task can thus be understood as a two-step process:

1. objectively *inferring genotypes* from evidence data, accounting for allele pair uncertainty using probability, and
2. subsequently *matching genotypes*, comparing evidence with a suspect relative to a population, to express the strength of association using probability.

The match strength is reported as a single number, the likelihood ratio (LR), which quantifies the change in identification information produced by having examined the DNA evidence.

The TrueAllele Casework system is a computer implementation of this two-step DNA identification inference approach. The computer objectively infers genotypes from DNA data through statistical modeling, without reference to a known comparison genotype. To preserve the identification information present in the data, the system represents genotype uncertainty using probability. These probabilistic genotypes are stored on a relational database. Subsequent comparison with suspects provides evidentiary identification information.

Many TrueAllele validation studies have been conducted to establish the reliability of the method [1]. Seven of these studies have been published in peer-reviewed scientific journals, on both synthetic [2, 3, 4, 5] and casework [6, 7, 8] data. Conducting such validations is consistent with the 2010 Scientific Working Group on DNA Analysis Methods (SWGDM) interpretation guidelines [9] (paragraph 3.2.2).

### *References*

1. Perlin MW, Szabady B. Linear mixture analysis: a mathematical approach to resolving mixed DNA samples. *J Forensic Sci.* 2001;46(6):1372-7.
2. Perlin MW, Simelnikov A. An information gap in DNA evidence interpretation. *PLoS ONE.* 2009;4(12):e8327.
3. Ballantyne J, Hanson EK, Perlin MW. DNA mixture genotyping by probabilistic computer interpretation of binomially-sampled laser captured cell populations: Combining quantitative data for greater identification information. *Sci Justice.* 2013;53(2):103-114.
4. Perlin MW, Hornyak J, Sugimoto G, Miller K. TrueAllele® genotype identification on DNA mixtures containing up to five unknown contributors. *J Forensic Sci.* 2015; *in press.*
5. Greenspoon SA, Schiermeier-Wood L, Jenkins BA. Establishing the limits of TrueAllele® Casework: a validation study. *J Forensic Sci.* 2015; *in press.*
6. Perlin MW, Legler MM, Spencer CE, Smith JL, Allan WP, Belrose JL, Duccman BW. Validating TrueAllele® DNA mixture interpretation. *J Forensic Sci.* 2011;56(6):1430-1447.
7. Perlin MW, Belrose JL, Duccman BW. New York State TrueAllele® Casework validation study. *J Forensic Sci.* 2013;58(6):1458-1466.
8. Perlin MW, Dormer K, Hornyak J, Schiermeier-Wood L, Greenspoon S. TrueAllele® Casework on Virginia DNA mixture evidence: computer and manual interpretation in 72 reported criminal cases. *PLOS ONE.* 2014;9(3):e92837.
9. SWGDAM. Interpretation guidelines for autosomal STR typing by forensic DNA testing laboratories. 2010; <http://www.fbi.gov/about-us/lab/codis/swgdam-interpretation-guidelines>

# EXHIBIT M

IN THE COURT OF COMMON PLEAS FIFTH JUDICIAL DISTRICT  
ALLEGHENY COUNTY, PENNSYLVANIA

IN RE APPLICATION FOR OUT OF  
STATE SUBPOENA BY MARTELL  
CHUBBS

CRIMINAL DIVISION

MD No. 2861-2014

MEMORANDUM OPINION AND  
ORDER OF COURT

Honorable Jeffrey A.  
Manning, P.J.  
Court of Common Pleas  
Room 325 Courthouse  
436 Grant Street  
Pittsburgh, PA 15219

Counsel of Record for the  
Parties:

For Dr. Mark W. Perlin, M.D.:

Barbara A. Schelb, Esquire  
Cohen & Grigsby, P.C.  
625 Liberty Avenue  
Pittsburgh, PA 15222-3152

For Martell Chubbs:

Emily McNally, Esquire  
Farrell & Reisinger, LLC  
436 7<sup>th</sup> Avenue, Suite 200  
Pittsburgh, PA 15219

FILED

2014 JUN 16 PM 4:10

DEPT OF COURT RECORDS  
CRIMINAL DIVISION  
ALLEGHENY COUNTY PA

IN THE COURT OF COMMON PLEAS FIFTH JUDICIAL DISTRICT  
ALLEGHENY COUNTY, PENNSYLVANIA

IN RE APPLICATION FOR OUT OF  
STATE SUBPOENA BY MARTELL  
CHUBBS

MD No. 2861-2014

MEMORANDUM OPINION AND ORDER OF COURT

Before the Court is the Application for Issuance of Out of State Subpoena filed on behalf of Martell Chubbs, a criminal defendant charged with Homicide in the State of California. The Application is filed pursuant to the Uniform Act to Secure the Attendance of Out of State Witnesses codified in Pennsylvania at 42 Pa.C.S.A. § 5963.

Attached to the Application is a copy of the Application presented to the Superior Court of the State of California at Case No. NA 093179.

Also attached is the Certificate for Out of State Subpoena executed by Judge Romero. In that Certificate, Judge Romero made the following relevant findings:

1. There is a pending criminal proceeding in Los Angeles County Superior Court involving the defendant, Martell Nathaniel Chubbs;
2. That Mark Perlman of Cybergenetics, is a material witness for the prosecution; and
3. and has in his possession under his control certain data identified as computer source codes and pseudo source codes for his computer software entitled TrueAllele which are material to the prosecution;

Based on those findings, Judge Romero ordered that Dr. Perlín's appear in his Courtroom on June 24, 2014 to give evidence. Judge Romero also directed, however, that Dr. Perlín could avoid having to appear on that date if he provided copies of all the materials identified in the subpoena to the Court Clerk, along with a Declaration of Records Custodian. Judge Romero's Certificate further provided that Dr. Perlín's reasonable travel expenses would be reimbursed.

Dr. Perlín filed a response with this Court opposing the Application, claiming, *inter alia*: that he is not a material witness; that the Uniform Act does not apply to a subpoena *duces tecum*; that the materials Dr. Perlín is directed to produce, "source codes and pseudo-source codes", are not material; that the production of these materials is not necessary to establish the admissibility of Dr. Perlín's testimony; and that complying with the subpoena would pose a hardship to Dr. Perlín and the owner of the computer program at issue, Cybergenetics, because it would require disclosure of trade secrets.

It is beyond cavil that Dr. Perlín is a material witness and that the evidence that is sought to be produced is material. Judge Romero, who is in a much better position than this Court to make that determination; found that he is a material witness in the Certificate he issued pursuant to the Uniform Act. Section 5963 (b) of Pennsylvania's version of the Uniform Act, provides that "...the



certificate shall be *Prima Facie* evidence of all of the facts stated therein." 42 Pa. C.S.A. § 5963 (b). Nothing that was presented to this Court during the June 9 hearing called into question the accuracy of Judge Romero's materiality determination.

Dr. Perlín is the expert that the prosecution will present to establish that biological material found at the scene of this 37 year old murder came from the defendant. The evidence that places the defendant at the scene of a crime is without question "material". The means by which Dr. Perlín arrived at his opinions is likewise material. The argument that Dr. Perlín is not a material witness and or that the evidence sought to be produced is not material is specious.

The argument that the Uniform Act does not apply to subpoena's *duces tecum* is likewise wholly without merit. The Act refers to "subpoenas" in general; it does not differentiate between those issued to compel the attendance of a witness and those issued to compel the production of physical evidence along with the attendance of the witness. Most states that have addressed whether the Uniform Act can be used to compel the production of physical evidence have concluded that it can. -See cases cited at 4 ALR 4th 836. Those states that have questioned the application of the Uniform Act to physical evidence have done so, generally, in cases involving attempts to secure physical evidence from a suspect or to secure physical evidence

alone without a subpoena of the person as well. *Id.* The only Pennsylvania Court to address this issue based its concern over the scope of the Act on the direction of the subpoena at a suspect in a criminal case. Marcus v. Dilulus, 363 A.2d 1205 (Pa. Super. 1976). This Court is satisfied that the Uniform Act permits subpoena's *duces tecum*.

The next objection proffered by Dr. Perlman is not relevant to the application of the Uniform Act. The admissibility of the evidence obtained pursuant to the subpoena is a matter left to the discretion of the Court that has issued the subpoena. Whether the evidence of the source codes or pseudo codes would be admissible is a question that will be addressed by a California judge applying California law. There is nothing in the Uniform Act that requires that this Court make a determination as to the admissibility of the evidence sought. More importantly, it is apparent from the Application filed in California that this evidence is sought to allow the defendant in that case to effectively cross-examine Dr. Perlman. Just because evidence is admissible, does not mean that it cannot be subject to cross examination.

The Court would also note that counsel for Dr. Perlman misstates the holding in Commonwealth v. Foley, 47 A.3d 882 (Pa. Super. 2012). All that Foley held was that the testimony of Dr. Perlman was admissible

pursuant to the Frye standards. The issue before that Court was the admissibility of the testimony, not its credibility. Nothing in Foley would prevent cross examination of an expert based upon the source codes or pseudo source codes, even in the Commonwealth of Pennsylvania. Whether that is permitted in California is a question for Judge Romero.

Finally, Dr. Perlman contends that complying with the subpoena would cause undue hardship to him and the source codes' owner, Cybergenetics, because it would require disclosure of a trade secret protected by this state's laws. Nothing in the subpoena requires the disclosure of trade secrets. Dr. Perlman is required to travel to California and to bring with him those documents. What, if anything, is done with that information is a matter to be determined by Judge Romero. The commercial value of that information is something that can readily be protected by Judge Romero.

IN THE COURT OF COMMON PLEAS FIFTH JUDICIAL DISTRICT  
ALLEGHENY COUNTY, PENNSYLVANIA

IN RE APPLICATION FOR OUT OF  
STATE SUBPOENA BY MARTELL  
CHUBBS

MD No. 2861-2014

ORDER OF COURT

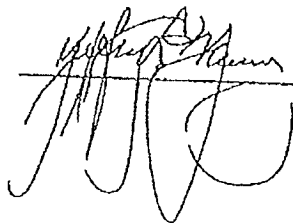
AND NOW, this <sup>16</sup>~~12~~th day of June, 2014, For the reasons set forth

In the Memorandum Opinion, the Application for Issuance of Out of  
State Subpoena Pursuant to the Uniform Act to Secure the Attendance  
of Out of State Witnesses In a Criminal Proceedings Is HEREBY  
GRANTED. The witness, Mark W. Perlin, M.D., Ph. D., shall comply  
with the subpoena issued by the Superior Court of California at Case  
No. NA093179.

BY THE COURT:

Date:

6-16-14

  
\_\_\_\_\_, P.J.

**EXHIBIT N**

IN THE COURT OF COMMON PLEAS OF  
ALLEGHENY COUNTY, PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA      CRIMINAL DIVISION

vs.

CC 201307777

MICHAEL ROBINSON,

Defendant.      BEFORE THE HONORABLE:

JILL E. RANGOS

THURS., NOV. 19, 2015

PRE-TRIAL MOTIONS

OFFICIAL COURT REPORTER:

LAURIE BRENNAN, R.M.R.

A P P E A R A N C E S

On behalf of the Commonwealth:

DANIEL E. FITZSIMMONS, DEPUTY DISTRICT ATTORNEY

BRIAN CATANZARITE, ASSISTANT DISTRICT ATTORNEY

On behalf of the Defendant:

NOAH M. GEARY, ESQUIRE

KENNETH J. HABER, ESQUIRE

COPY



1 Q. Does the case packet for the February, '14  
2 computer runs and the testing, does it exist?

3 A. I'll take a look at what I sent you. If it  
4 existed, I think we would have sent it to you. So I  
5 don't think so.

6 Q. And why would it not have been preserved?

7 A. If it didn't exist, it couldn't have been  
8 preserved.

9 JUDGE RANGOS: See, I don't know if you  
10 think he is explaining too much, he already  
11 explained that. He said it wasn't prepared  
12 because, in his recollection, you don't prepare  
13 them until you get the indication from whoever  
14 is paying for it that they're going to trial  
15 with it.

16 ATTORNEY HABER: This is a death penalty  
17 case.

18 JUDGE RANGOS: I'm not questioning when the  
19 Commonwealth decided to charge someone. I'm  
20 just telling you what he just answered. If you  
21 want to cross-examine him on that, go ahead.

22 **BY ATTORNEY GEARY:**

23 Q. We were provided your report February 5, 2014.  
24 Are you aware of that? By the prosecutors.

25 A. That's what usually happens.



1 Q. Okay. And why were we not given a case packet  
2 at that time pertaining to that testing?

3 A. Because we weren't asked to prepare one. Most  
4 likely because there wasn't a trial date anywhere on the  
5 horizon.

6 Q. I mean, that's very fluid as to when there is a  
7 trial date.

8 A. No, I don't think so. It's very concrete when a  
9 defender or a prosecutor asks us for a case packet. We  
10 let them know what they need it for and how it will be  
11 used. And it's their decision. We don't just create  
12 documents and charge people for it.

13 Q. Are you saying the Commonwealth attorneys did  
14 not ask you for a case packet pertaining to your  
15 February 5, 2014 report?

16 A. That's my recollection unless -- Let me take a  
17 look to see if there is another one in here, but I don't  
18 think so.

19 Q. Yes. Please do.

20 A. Nope. I don't see one.

21 Q. And at this point you are not going to be able  
22 to produce one; is that what you're telling me?

23 A. It wouldn't be relevant as such.

24 Q. How would it not be relevant if it explained the  
25 basis for your findings in your February 5, 2014 report?

1 A. Okay. The case packet that you have would be  
2 virtually identical except match statistics would have  
3 been updated in the newer version of the software. So  
4 basically everything would be the same except for the  
5 final few tables that gave the details of the stats.

6 JUDGE RANGOS: Match statistics changed  
7 because the software was updated to use a more  
8 specific match rather than a conservative  
9 estimate?

10 THE WITNESS: That's correct.

11 A. That's also the case because we need to keep  
12 track of these things that TrueAllele probably would  
13 both be in there. Most cases don't go to trial. So  
14 defenders and prosecutors alike would be wasting a lot  
15 of money for a guilty plea or where charges were dropped  
16 or something like that.

17 Q. What's the cost for a case packet?

18 A. Twenty-five hundred dollars.

19 Q. Now, you were asked questions this morning about  
20 your understanding of various court decisions regarding  
21 TrueAllele. Do you remember?

22 A. Yes.

23 Q. Okay. Now, in your declaration you have a  
24 paragraph 24.

25 A. Yes. I have the declaration. Paragraph 24,

1 yes.

2 Q. It says, "TrueAllele's reliability has been  
3 confirmed in appellate precedent in Pennsylvania. See  
4 Commonwealth v. Foley."

5 Is that what it says?

6 A. Yes. That's what it says.

7 Q. And you stand by that?

8 A. It's in the section on widespread acceptance,  
9 and it's talking about its acceptance so, yes.

10 Q. Okay. Do you understand that Judge Manning in  
11 the Martell Chubbs matter stated in his opinion, it's  
12 page 5, "The Court would also note that counsel for  
13 Mr. Perlin states the holding in Commonwealth versus  
14 Foley --

15 ATTORNEY HABER: Misstates.

16 Q. Sorry. " -- misstates the holding in  
17 Commonwealth versus Foley," cite given. "All that Foley  
18 held was that the testimony of Dr. Perlin was admissible  
19 pursuant to the Frye standards. The issue before that  
20 Court was the admissibility of the testimony, not its  
21 credibility."

22 ATTORNEY FITZSIMMONS: Objection, Judge.  
23 However one wants to interpret that ruling is  
24 totally up to you, not to a witness.

25 JUDGE RANGOS: Again, this expert is your

1           him complete the answer.

2           A.       In the case, for example, of the Virginia study,  
3           because that data came from case work and it involved  
4           potentially sensitive and private information, there was  
5           an exchange with the editors with notes regarding the  
6           laws in Virginia, confidentiality, so on, of why that  
7           data should not be submitted, and I think that was  
8           disclosed in the article.

9           So, in fact, if there is a question, publishing  
10          in PLOS ONE involves a lot of administrative exchange  
11          going back and forth. They raise those issues, and then  
12          they are discussed.

13          So it's not the case that something slipped by  
14          them twice. We had those discussions about whatever  
15          their concerns were, and we made sure we were in  
16          compliance with the law of whatever their express  
17          concern is.

18          **BY ATTORNEY GEARY:**

19          Q.       And DNA complex mixture, deconvolution  
20          identification, the threshold method is used in this  
21          country; correct?

22          A.       Would you just say that again?

23          Q.       Sure. The threshold method is --

24          A.       I know what the threshold method is.

25          Q.       There are two RFUs and there are lines going

1 across. And data above the top threshold is not  
2 considered and data below the bottom threshold is not  
3 considered; correct?

4 A. I am with you about 80 percent. Correct.  
5 That's good enough.

6 Q. And the threshold method, that's what's used by  
7 the FBI, correct, in this country as of today?

8 A. That is correct. It's also the method that they  
9 and the Commerce Department said they are moving away  
10 from as quickly as possible because of problems with it.

11 Q. Who did they say that to, that they were moving  
12 away from it? Who did they say that to?

13 A. They've purchased continuous software. I think  
14 STRmix. And the National Standards of Technology and  
15 the Commerce Department is keeping people updated about  
16 the need to move to more robust software that are not  
17 thresholds.

18 Q. We are talking about today in America and in  
19 this courtroom. Your TrueAllele method, the selling  
20 point is you claim that you can consider data above the  
21 top threshold; correct?

22 A. Yes.

23 Q. And you can also consider data below the bottom  
24 threshold; correct?

25 A. Yes. Like any number of other continuous

1 methods. That's correct.

2 Q. And you claim that the data above the top  
3 threshold and below the bottom threshold is useful and  
4 can be used in the analysis; correct?

5 A. Yes. And that was actually claimed in the  
6 National Research Council Report from 20 years ago that  
7 pointed out that methods that used thresholds discard  
8 much of the information and are not as preferred as  
9 other methods. So you are addressing an old issue.

10 Q. But today the FBI, they don't use your method;  
11 do they?

12 A. No, they don't. They've purchased --

13 Q. How many times --

14 ATTORNEY FITZSIMMONS: Can he finish his  
15 response before he's interrupted with another  
16 question?

17 JUDGE RANGOS: This is not a jury trial. I  
18 am the information gatherer. So I would like to  
19 hear the information, unless it is information  
20 that's being repeated, and then I will let you  
21 know.

22 Please finish answering the question.

23 A. The FBI has communicated to the forensics  
24 community that they have purchased the New Zealand  
25 continuous method of software called STRmix which is

1 similar to TrueAllele, not quite as sophisticated. So  
2 the same concept of eliminating threshold is what the  
3 FBI had said they are currently validating and moving  
4 to.

5 JUDGE RANGOS: And that's a commercial  
6 program with a closed source code?

7 THE WITNESS: That's correct.

8 **BY ATTORNEY GEARY:**

9 Q. And your product is available for purchase by  
10 the FBI; correct?

11 A. If they had wanted to buy it.

12 Q. And they have not; correct?

13 A. They did purchase an earlier version of the  
14 system. That was for reference samples.

15 Q. How many crime labs are there in the United  
16 States? How many crime labs, roughly, are there in the  
17 United States?

18 A. Probably several hundred.

19 Q. Okay. So, say, 200?

20 A. Maybe 250. It changes.

21 Q. Two fifty. Only three of 250 crime labs have  
22 used your TrueAllele system?

23 A. About a dozen groups have purchased it, and  
24 currently there are four groups that are online and  
25 using it regularly for complex mixtures.

1 Q. I'm not talking about groups purchasing it. I'm  
2 talking about crime labs using it in real cases. There  
3 are three in the United States as of today; correct?

4 A. There are four.

5 Q. There are four. So that means that 246 crime  
6 labs in the United States as of today do not use your  
7 methodology; correct?

8 ATTORNEY FITZSIMMONS: Objection to the  
9 relevance, Judge.

10 JUDGE RANGOS: Overruled. I'll let him go.  
11 Now, listen, please. I'm a peaceful  
12 person. I don't like my blood pressure to go up  
13 here. I don't want the attorneys to play games  
14 with exasperation and so on. Both sides.

15 Let's take a deep breath. Thank you.

16 **BY ATTORNEY GEARY:**

17 Q. So 246 out of 250 crime labs in the United  
18 States as of today do not use your methodology; correct?

19 A. That's correct. And according to the Commerce  
20 Department, all of them will be using some sort of  
21 probabilistic genotyping method. Maybe not our specific  
22 product, but one of another dozen products if not ours  
23 within the next five to ten years.

24 That's been the direction of the community for  
25 at least 10 years, and it's been accelerated.



1 Q. In the next 5 to 10 years; is that right?

2 A. Some next year, some five years. Crime labs  
3 don't always adopt new technology rapidly.

4 Q. If this Court can ensure that no financial harm  
5 will come to you or Cybergenetics, will you produce your  
6 source code to the defense in this case?

7 A. Since that's nothing that you can guarantee, of  
8 course not.

9 Q. Of course not what?

10 A. I mean, if we were convening on the moon, would  
11 I produce the source code? You can't -- you can't  
12 actually implement what you just described.

13 Q. There is going to be a ruling in the case. It  
14 is either going to be you are ordered to produce it or  
15 not. If you are ordered to produce it and the judge  
16 issues a protective order and makes Dr. Chakraborty sign  
17 it, any computer programs, will you produce your source  
18 code?

19 ATTORNEY FITZSIMMONS: Objection, Judge.

20 JUDGE RANGOS: How is that relevant to my  
21 ruling? What the consequence would be if he  
22 doesn't produce it or something, how is that  
23 relevant to how I rule?

24 ATTORNEY GEARY: Because if he says, "No,"  
25 you need to know, he is not acting in bad faith.

1 I mean, he is not acting in good faith. It  
2 shows bad faith.

3 JUDGE RANGOS: No, no. I mean, it is up to  
4 me what happens if he is in contempt of court  
5 order. If I order it produced.

6 ATTORNEY GEARY: It's a credibility issue,  
7 Your Honor.

8 JUDGE RANGOS: It's not a credibility  
9 issue.

10 ATTORNEY GEARY: That's all I have.

11 ATTORNEY FITZSIMMONS: If I could just have  
12 a moment, Judge.

13 Just one thing if I could, Judge.

14 ***REDIRECT EXAMINATION OF MARK WILLIAM PERLIN***

15 ***BY ATTORNEY FITZSIMMONS:***

16 Q. Sir, there have been certain disclosures made in  
17 connection with this case. Not just a report, not just  
18 a case summary, but there was also other materials  
19 provided to the defense so they could understand the  
20 operation of this software; am I right, sir?

21 A. Yes. This is some of what it was that we  
22 provided electronically in a drop box.

23 JUDGE RANGOS: And he is holding up for the  
24 record a three-inch black binder.

25 Q. And included in there, I think it's properly

PEOPLE V. JOHN WAKEFIELD

STATE OF NEW YORK  
SUPREME COURT (CRIMINAL PART) COUNTY OF SCHENECTADY

THE PEOPLE OF THE STATE OF NEW YORK,

-against- INDICTMENT #A-812-29

JOHN WAKEFIELD,  
Defendant.

Schenectady County Judicial Building  
612 State Street  
Schenectady, New York 12305

March 17, 2015

JURY TRIAL  
(TESTIMONY OF MARK W. PERLIN, M.D., Ph.D.)

B E F O R E:

HON. MICHAEL V. COCCOMA  
Justice of the Supreme Court

A P P E A R A N C E S:

FOR THE PEOPLE:  
SCHENECTADY COUNTY DISTRICT ATTORNEY'S OFFICE  
Schenectady County Judicial Building  
612 State Street  
Schenectady, New York 12305  
BY: PETER WILLIS, ESQ.  
ASSISTANT DISTRICT ATTORNEY and  
KEVIN CHEUNG, ESQ.  
ASSISTANT DISTRICT ATTORNEY

FOR DEFENDANT WAKEFIELD:  
FREDERICK RENCH, ESQ.  
646 Plank Road - Suite 204  
Clifton Park, New York 12065  
-AND-  
CATHERINE BONVENTRE, ATTORNEY-AT-LAW

ALSO PRESENT: JILL LOUCKS  
Court Clerk

MELISSA A. MATTHEWS, C.S.R.  
Official Senior Court Reporter

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*PERLIN - CROSS - ATTY. RENCH*

1  
2 in scientific journals. There's a distinction between  
3 doing a study, writing a report and having the type of  
4 reliability that's needed for a laboratory on an internal  
5 validation to proceed as opposed to doing what some  
6 forensic scientists called developmental validation where  
7 that study is then published in a scientific journal.  
8 Most validations aren't published.

9 Q Understood. You mentioned the New York State  
10 Police did a validation study, two of them, I think you  
11 said that were unpublished.

12 A They did a number but there were two more recent  
13 ones that were done independently of the Forensic Science  
14 Commission reports that were done.

15 Q The two validation studies done by the State  
16 Police, who did the actual analysis of the .FSA file  
17 studies?

18 A That was done by the New York State Police on  
19 their own TruAllelesystem.

20 Q The TruAllele system that New York State Police  
21 has that they purchased from Cybergenetics, they haven't  
22 implemented that, have they, in actual casework for cases  
23 such as this?

24 A That's true.

25 Q How long have they had the TruAllele Casework

*PERLIN - CROSS - ATTY. RENCH*1  
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System?

A They've had the system for at least four years. They've had approval from the Forensic Science Commission to start using it since July of 2011.

Q When did you do your analysis for this case?

A Two years ago.

Q So 2013?

A Yes.

Q So the New York State Police lab had the TruAllele casework system technology for a number of years prior to 2013, correct?

A Yes.

Q They received authorization or permission to use it by the Forensic Science Commission for the state of New York, is that correct?

A Yes.

Q That would be in 2011?

A Yes.

Q Yet they chose to have you do the analysis for this case, correct?

MR. WILLIS: Objection. Calls for speculation.

THE COURT: If he knows. It's cross-examination. You can answer it. Overruled.

# EXHIBIT O

IN THE COURT OF COMMON PLEAS OF ALLEGHENY COUNTY,  
PENNSYLVANIA

COMMONWEALTH OF  
PENNSYLVANIA

CRIMINAL DIVISION

CC 2013-07777

VS

DISCOVERY MOTION TRANSCRIPT

MICHAEL ROBINSON,

FILED BY:  
Janice DiMatteo Fedorek  
Official Court Reporter

Defendant.

DATE:  
October 9, 2015

BEFORE:  
HON. JILL E. RANGOS

COUNSEL OF RECORD:  
For the Commonwealth:  
DANIEL FITZSIMMONS, ESQ.  
and  
BRIAN D. CATANZARITE, ESQ.  
Assistant District Attorney  
Third Floor - Courthouse  
Pittsburgh, PA 15219

For the Defendant:  
NOAH GEARY, ESQ.  
30 E Beau Street, Suite 225  
Washington, PA 15301  
and  
KENNETH HABER, ESQ.  
Difenderfer Rothman & Haber  
304 Ross Street, Suite 400  
Pittsburgh, PA 15219

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AND APPLICABLE LOCAL RULES AND SHALL NOT BE  
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1 BY MR. GEARY:

2 Q. Doctor, are you on Page 16 of 56?

3 A. Just a minute. Which section are you referring  
4 to?

5 THE COURT: 5.3.

6 BY MR. GEARY:

7 Q. 5.3 Process, and in the lower right-hand column  
8 it says, "Page 16 of 56."

9 A. Yes.

10 Q. I'm going to read you some from this Standard  
11 Operating Procedure Manual and then I have a  
12 couple of questions about it.

13 Under 5.3 Process it states: "In the  
14 process step, the operator creates the evidence  
15 and reference requests described in the plan.  
16 The computer takes these requests and, using  
17 the assumptions, options and processing  
18 parameters, infers genotypes from the data.  
19 These genotypes results are then assessed."  
20 Did I read that correctly?

21 A. Yes.

22 Q. Now, in all of the materials that have been  
23 provided, which you have reviewed, starting  
24 with Doctor Perlin's first three-page report,  
25 to a second three-page report, to the Case



1 Packet, to the Standard Operating Procedures,  
2 in any of the documentation that has been  
3 provided which you reviewed, is there any  
4 identification of what the assumptions are that  
5 is referenced in the sentence I just read, "The  
6 computer takes these requests and using the  
7 assumptions, options and processing parameters,  
8 infers genotypes from the data?" Is there  
9 anything in any of the documentation which  
10 let's you know what those assumptions are?

11 A. No.

12 Q. Does anything in the documentation provided  
13 tell you how many assumptions were made?

14 A. No.

15 Q. Does anything in the documentation let you know  
16 why those certain assumptions were made?

17 A. No.

18 Q. Next, looking at the word "options," so the  
19 sentence would be, "The computer takes these  
20 requests and using the options and processing  
21 parameters infers genotypes." Is there  
22 anything in the documentation that you reviewed  
23 telling what those options were and are?

24 A. Only vague indications, like, DNA degraded, but  
25 nothing more specific than that.

1 Q. But nothing more specific than that?

2 A. Yes.

3 Q. Does anything in the documentation tell you how  
4 many different options were employed or  
5 considered by Dr. Perlin's software program?

6 A. Not anything specific indicated.

7 Q. And what about processing parameters, is there  
8 anything in the documentation that tells you  
9 what the processing parameters were?

10 A. Again, nothing in specific terms.

11 Q. Doctor, explain to us, as a DNA expert, what  
12 information do you need that has not been  
13 provided, to help you assess the reliability  
14 and validity of the methodology utilized in  
15 Doctor Perlin's Casework software program?

16 A. Start with the following. For example, I would  
17 need what are the input variables the computer  
18 is given to start the work. In what order, in  
19 what sequence does input variables when  
20 presented to the computer. What are the  
21 assumptions made about the input variables?

22 For example, one might have said, how  
23 many contributors in the sample? And what is  
24 the background of making that assumption?

25 Q. And what is the background of making that

1 assumption?

2 A. Correct. What is the rational of making that  
3 assumption. Then I will go to the issues of  
4 test dates.

5 Q. You have to say that again.

6 A. Let me give you some examples of what I mean.

7 Q. Yes.

8 A. For example, according to Doctor Perlin's own  
9 admission the TrueAllele system is not a single  
10 formula. It is a series of steps of  
11 computations.

12 Q. One second. You said it is not a single  
13 formula?

14 A. Correct. It is not a single formula.

15 Q. What is it?

16 A. It is series of different steps of  
17 computations.

18 Q. A series of different steps of computations?

19 A. Correct. And these computations are done based  
20 on the results of the previous computation.  
21 Consequently, the computer operator who is  
22 running the TrueAllele software, he or she has  
23 to give instructions to the computer, based on  
24 the intermediate results what would be the next  
25 set of computations to be done.

1 Q. One second. Based on the what?

2 A. I said, it is series of steps of computation,  
3 right? Once the computer does it, the computer  
4 gives you some intermediate results.

5 Q. Some what?

6 A. Intermediate results.

7 Q. Intermediate results.

8 A. From those intermediate results, the program  
9 instructs the computer what should be the next  
10 set of computations.

11 Q. The next set of computations.

12 A. The next set of computations. What kind  
13 of parameters that we use for those  
14 computations. What kind of conditions are to  
15 be used for those computations. It is not a  
16 play and plug kind of software. It is a  
17 decision tree kind of a procedure.

18 THE COURT: It is not a play and plug  
19 kind of procedure. It is a decision tree  
20 kind of procedure?

21 THE WITNESS: Correct.

22 BY MR. GEARY:

23 Q. Please continue. What other information do you  
24 need and why?

25 A. I didn't cover most of them in generic terms.

**EXHIBIT P**

IN THE COURT OF COMMON PLEAS OF ALLEGHENY COUNTY, PENNSYLVANIA

CRIMINAL DIVISION

COMMONWEALTH OF PENNSYLVANIA

VS.

MICHAEL ROBINSON,

Defendant.

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No. 7777 of 2013

AFFIDAVIT OF SARA BITNER

1. I am Sara Bitner.
2. I have personal knowledge of all of the facts set forth in this Affidavit.
3. If called to testify, I would and could testify competently to the facts contained in this Affidavit.
4. I am employed by the Medical Examiner's Office of Allegheny County, and have been since 2006, where I started as a Serologist.
5. My current position is Manager of the Forensic Biology Section, which includes the DNA Section.
6. To my knowledge, although our crime lab purchased the Cybergentics True Allele Casework System, this lab has never used it in casework.
7. To my knowledge, this lab has never used the True Allele Casework System to conduct DNA analysis to deconvolute complex DNA mixtures.
8. To my knowledge, this lab has never issued a report which contained a finding generated by the True Allele Casework System.
9. Before this lab could use the True Allele Casework System in DNA analysis to deconvolute complex mixtures, we would need to validate it.

10. To use the True Allele Casework System on DNA casework, we would need to conduct an internal validation study.

March 4, 2016

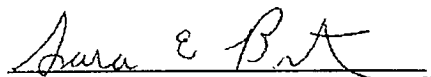


Sara Bitner

VERIFICATION

I, Sara Bitner, hereby verify that the statements made in the foregoing Affidavit are true and correct to the best of my knowledge, information and belief. I make this Verification subject to Title 42 Pa. C.S.A. Section 4904, relating to unsworn falsification to authorities.

March 4, 2016



Sara Bitner

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Annie Marbury, Notary Public  
City of Pittsburgh, Allegheny County  
My Commission Expires Oct. 15, 2016  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

