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6 *Attorneys for Antolin Garcia-Torres*

7 IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
8
9 IN AND FOR THE COUNTY OF SANTA CLARA

10 People of the State of California,) Case No.: 213515
11)
12 Plaintiff,) Reply to Government Opposition
13) (Motion to Exclude DNA Evidence)
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16 The government argues in opposition to the Defendant's motion to exclude DNA
17 evidence that the *Kelly* test in California only applies to "a new or novel scientific technique"
18 and therefore, the Court should deny the defendant's request for a hearing under the first
19 prong of general acceptance.¹ The government further contends that the Court should also
20 deny the defendant a hearing under the third prong of *Kelly* and submits a declaration from
21

24 ¹ Opposition at 1.

1 criminalist Brooke Barloewen as its “foundational” showing that correct scientific
2 procedures were used.²

3 These two arguments reflect a lack of understanding of the structure and use of the
4 *Kelly* standard, especially as it is applied to DNA cases.

5
6 **I. KELLY’S FIRST PRONG**

7 Contrary to the assertion of the government that the first prong of *Kelly* only applies to
8 new or novel scientific techniques, a long line of cases clearly holds that appellate precedent
9 *may control* unless “*new evidence is admitted showing the scientific community has*
10 *changed its attitude.*”³ The Supreme Court articulated this most clearly in *People v. Venegas*:

11 if a published appellate decision in a prior case has already upheld the admission of
12 evidence based on such a showing [of general acceptance], that decision becomes
13 precedent for subsequent trials in *the absence of evidence that the prevailing*
*scientific opinion has materially changed.*⁴

14 Additionally, the government completely ignores a second and important part of the first
15 prong, that part of general acceptance which requires the establishment of “the reliability of
16 the method.”⁵

17 **A. Evidence of a Controversy is Evidence of a Changed Attitude in the Scientific**
18 **Community.**

19 As described in great detail in defendant’s moving papers, and illustrated by the
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22 ² *Id.* at 2.

23 ³ *People v. Cordova* (2015) 62 Cal.4th 104, 127 [citing *People v. Nelson* (2008) 43 Cal.4th 1242, 1257; *People v.*
Kelly, (1976) 17 Cal.3d 24, 30-32]. See also, *People v. Henderson* (2003) 107 Cal.App.4th 769, 777; *People v.*
Venegas (1998) 18 Cal.4th 47, 76; *People v. Stevey* (2012) 209 Cal.App.4th 1400, 1415.

24 ⁴ 18 Cal 4th at 53 [emphasis added].

⁵ *Kelly*, *supra*, 17 Cal.3d at 30.

1 numerous exhibits submitted with that brief, since the year 2000, a growing body of
2 literature and a growing number of scientists, are questioning the fundamental reliability of
3 DNA testing using increasingly small quantities of DNA that produce data that are
4 inherently unreliable due to increased, unpredictable artifacts. The government ignores all
5 of this evidence and attempts to characterize the issue before this Court as simply the use of
6 the Identifiler Plus kit, separate and apart from the application of the kit to low level
7 samples and the interpretation and statistical analysis of the data. As is clear from the
8 numerous journal articles and text books cited by the defense, the application of this or any
9 other PCR based DNA kit using enhanced techniques on low level samples is deemed by a
10 large number of scientists to be unreliable, thus it does not satisfy the first prong of *Kelly*.

11
12
13 **1. The government has proffered no scientific articles that support the use of
enhanced methods of testing on low level samples as reliable.**

14 In support of its motion, the government, which bears the burden of proof, submits
15 one article and a declaration from a lab analyst to refute the defendant's arguments. These
16 fail for a number of reasons.

17
18 The article cited by the government as Exhibit 7 is a general validation study of the
19 Identifiler Plus test kit published in 2012. While it purports to support the increased
20 sensitivity of the test method, it also fails to address the issues raised by the many articles
21 cited in defendant's moving papers (increased artifacts and complex mixtures). The article
22 lays out the manufacturer's studies done on mixed samples, however, similarly to the SCCCL
23 lab, the manufacturer does not conduct validation studies on mixtures of more than two
24

1 individuals or on degraded mixed samples.⁶ In this case, the samples that contain mixtures
2 are all of at least three individuals and much of the data falls below the lab's stochastic
3 threshold. In addition, the study does not address the issue relating to the interpretation of
4 data and the application of a reliable statistical model to data that exhibits stochastic effects.⁷
5

6 Furthermore, in determining general acceptance, this Court cannot rely upon a study
7 conducted by the manufacturer of the kit, especially if it is the only study proffered by the
8 proponent of the evidence. In *Brown*, the California Supreme Court explained that one
9 necessary qualification of an expert testifying as to the first prong of *Kelly*, is that “[h]e must
10 also be ‘*impartial*,’ that is, *not so personally invested in establishing the technique’s*
11 *acceptance that he might not be objective about disagreements within the relevant*
12 *scientific community.*”⁸
13

14 Government Exhibit 7 is a publication from the manufacturer of the kit, Life
15 Technologies⁹ and thus the source of this information is from, not only a proponent, but an
16 entity that sells the kits and all of the associated software and hardware to crime labs and
17 reaps the profits. The acceptance of this technology brings great financial benefit to the
18 company. The kits themselves can cost from \$1,000 to \$18,000 depending upon the number
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22 ⁶Opposition, Exhibit 7, pg 465.

23 ⁷ The government argues that interpretation of the data goes to the weight, not the admissibility. This position is
24 contrary to California law and will be discussed, *infra*.

25 ⁸ *People v. Brown* (1982) 40 Cal.3d 512, 530 [citing *Kelly, supra*, at 37-40][emphasis added].

⁹ The manufacturer of the kit has changed names over the years and is now owned by Thermo Fischer Scientific.
[https://en.wikipedia.org/wiki/Life_Technologies_\(Thermo_Fisher_Scientific\)](https://en.wikipedia.org/wiki/Life_Technologies_(Thermo_Fisher_Scientific)). Last accessed 11/3/2016.

1 of reactions.¹⁰ The software used to analyze the data cost nearly \$15,000 for one license.¹¹
2 All of the associated machines needed to run the tests are also sold by this company, many
3 of which cost tens of thousands of dollars, along with spare parts and smaller pieces of
4 equipment. Life Technologies single article does not reflect a consensus from the scientific
5 community, rather it is a single study by a very interested proponent of the evidence which
6 has a vested interest in the admission of its kits in criminal cases.
7

8 Brooke Barloewen's declaration fails for similar but different reasons. First and
9 foremost, Ms. Barloewen is not qualified to proffer an opinion regarding the first prong of
10 *Kelly*.¹² It is well settled law in California, that laboratory analysts are not considered
11 qualified to testify or offer opinions on the question of general acceptance under the first
12 and second prongs of *Kelly*.
13

14 In discussing the witnesses' qualifications, the *Brown* court stated:

15 Springer and Andrus were competent and well-credentialed forensic
16 technicians, but their identification with law enforcement, their career interest
17 in acceptance of the tests, and their lack of formal training and background in
18 the applicable scientific disciplines made them unqualified to state the view of
19 the relevant community of *impartial scientists*.¹³

20 Ms. Barloewen, also, is unqualified to offer testimony as to general acceptance. She is
21

22 ¹⁰ <https://www.thermofisher.com/order/catalog/product/4427368>. Last accessed 11/3/2016

23 ¹¹ <https://www.thermofisher.com/order/catalog/product/4398176?ICID=search-product>. Last accessed 11/3/2016

24 ¹² The government misunderstood the defense argument on this issue. The limitations on expert qualifications at
25 pages 20-22 in defendant's moving papers applies to *first prong* experts, not third prong (specifically see fn. 60) as
indicated by the government in their opposition at pg 2:12-17.

¹³ *Id.* [emphasis original].

1 an analyst¹⁴ in lab whose job is dependent on the admission of DNA in courts. She has
2 worked as a forensic scientist for a lab operated by law enforcement for most of her career,
3 and works hand in hand with law enforcement agencies in criminal investigations.

4 Her declaration is striking in its lack of detail or reference to any supporting articles
5 and peer reviewed research other than the manufacturer's validation study. Her opinions
6 appear to be based solely on the lab's internal validation and the manufacturer's validation
7 with no consideration or discussion of the articles that point to the unreliability of the
8 methods employed by SCCCL in this case. Ms. Barloewen's failure to address any of the
9 exhibits proffered by the defense that layout the pitfalls and dangers of this type of testing,
10 further illustrates her lack of qualification.

11
12 The burden falls on the proponent of the new technique to "***show a scientific***
13 ***consensus supporting its use***; if a fair overview of the literature discloses that scientists
14 ***significant either in number or expertise publicly oppose [the technique] as***
15 ***unreliable, the court may safely conclude there is no such consensus at the present***
16 ***time.***"¹⁵ The government, while citing too many of the defendant's exhibits, proffers no
17 articles that indicate that there is general acceptance of the use of enhanced techniques with
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23 ¹⁴ While Ms. Barloewen may have academic credentials to be an analyst in a lab, that does not outweigh the other
24 factors discussed.

¹⁵ *People v. Brown* (1982) 40 Cal. 3d 512, 533 [emphasis added].

1 low level samples that are complex mixtures.¹⁶ As in *Brown*, the government fails on a key
2 factor in that it does not provide any citations or discussions of the literature to rebut the
3 defendant's arguments regarding reliability or to fulfil its burden of proof to show a scientific
4 consensus as to the reliability of the technique.¹⁷

5
6 **2. The use of enhanced methods is not an improvement or evolution of a kit
that increases its reliability as envisioned by earlier California case law.**

7 The government insists that the Identifiler Plus kit is not new or novel under the first
8 prong of *Kelly* and therefore, this Court should not hold a hearing under the first prong.

9 This argument fails for a number of reasons, both legal and factual. The question for this
10 Court is not if the Identifiler Plus kit is similar to the Identifiler kit, but whether the methods
11 in the lab's protocols, which add enhancements that result in data in a range that the lab
12 itself deems subject to artefactual problems that impact the reliability of the data, and any
13 interpretations and statistical analysis performed fall under the first prong of *Kelly*.

14
15 The methods employed by the lab are not a mere "evolution" of the kit, this is a new
16 use that degrades the reliability of the data. A number of cases have recognized that "the
17 issue is not whether there are differences between [the current kit] and prior kits, but
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23 ¹⁶ The government oddly points out in support of its position, that there is no clear distinction between low template
DNA and conventional DNA testing, Opp at 5, as a basis for the defendant's arguments to be "untenable." This
24 shows a surprising lack of understanding from the government as to the arguments presented by the defendant.

¹⁷ *Id.*

1 whether it *significantly changes the methodology*.”¹⁸ Contrary to the government’s
2 argument, this is a case “in which the scientific community view[s] the test methodology ‘as
3 experimental or of dubious validity.’”¹⁹

4 The government cites to a handful of cases that discuss the application of *Kelly* to
5 new PCR based testing kits.²⁰ However, the government ignores a critical component of the
6 reasoning of these cases. First, when discussing the similarities of the two kits, the
7 government points only to changes made to the Identifiler Plus kit that are similar to
8 previous changes that *enhance and improve* the test. The focus of the cases cited, is that
9 the changes are, as the Supreme Court in *People v Stealy* observed, an “*improvement or*
10 *refinement* in DNA methodology [which] qualifies as another *breakthrough innovation*
11 within the meaning of *Kelly*, or whether the change represents a *mere evolution* of a
12 generally accepted scientific technique.”²¹ *Cordova* characterizes the issue slightly differently
13 in holding that the Identifiler kit did not qualify for a first prong hearing: “Identifiler is
14 merely another in a series of *improved* ways to *apply long-accepted science*, not a new
15 scientific technique in the *Kelly* sense.”²²

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18 Second, many of the cases cited by the government in support of its position rely on
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21 ¹⁸ *People v. Lazarus*, 238 Cal.App.4th 734, 783-4 (2015) [emphasis added][citing *U.S. v. McCluskey*, (2009) 602
22 F.Supp.2d 658,1257]; *People v. Jackson*, (2008) 163 Cal. App. 4th 313, 325.

¹⁹ *People v. Hill* (2001) 89 Cal. App. 4th 48, 58 [quoting *People v. Stoll* (1989) 49 Cal.3d 1136, 1156].

²⁰ Government Brief at 4; *People v Cordova* (2015) 62 Cal. 4th 104; *People v Hill* (2001) 89 Cal. App. 4th 48; *People v Jackson, supra*.

²¹ *People v. Stevey* (2012) 209 Cal.App.4th 1400, 1411 [emphasis added].

²² *Cordova, supra*, 62 Cal. 4th at 127.

1 trial records in which it appears that the moving parties did not cite to the scientific literature
2 to support the argument that there was a change in scientific opinion and controversy as to
3 the methods use.²³

4 The question for this Court is not whether Identifiler Plus on its own, is a new or
5 novel scientific technique under *Kelly's* first prong, rather the issue before this Court relates
6 to the application of this kit in a fundamentally unreliable manner which has created a
7 controversy in the scientific community, and cannot be considered the application of long-
8 accepted science. The defendant argued in his moving papers that there has been a change
9 in the science around LCN or LT DNA testing using enhanced methods that has led to a
10 heated debate in the forensic community regarding the reliability of the testing, and the
11 appropriate scientific protocols that should be employed to interpret the data and apply a
12 statistical calculation.

13
14
15 The use of enhanced methods on low template DNA cannot be considered an
16 evolutionary step in the development of a kit that increases its sensitivity and reliability. It
17 cannot be considered an improvement or refinement of a technique when it causes the kit to
18 perform in a manner that generates unpredictable artifacts in the data. The lab has done
19 internal validation that illustrates that the protocol that they used in this case generates
20 artifacts such as allelic drop-out, drop-in, increased stutter and peak height ratio imbalance.
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24 ²³ See, *People v Lazurus, supra*, at 785; *People v Hill, supra*, at 58 [relying on opinion of one expert with no
reference to scientific articles];

1 The government in this case has not pointed to a single study or scientific journal article that
2 provides scientific support for the methods used in this case, because none exists.

3 The government has failed, as the proponent of the evidence, to provide this Court
4 with any scientific authority that addresses the issue of reliability of the enhanced methods
5 employed by SCCCL on low level samples that contain complex mixtures.
6

7 **3. Evidence of the novel nature of the technique come from the fact that**
8 **courts have considered this type of evidence and reached contrary**
9 **conclusions.**

10 In considering whether a technique is generally accepted, the trial court “may look to
11 published California decisions, decisions from other jurisdictions, and ‘relevant scientific
12 literature.’”²⁴

13 Few courts have considered the question of admissibility of LCN DNA testing under
14 *Daubert* or *Kelly*, and those that have come to differing conclusions based on different
15 reasoning. A number of the cases are discussed below.

16 In *U.S. v. Davis*,²⁵ the District Court held a hearing on whether or not the testing in
17 that case was LCN. The court rejected the defense argument that the testing done in the
18 case was LCN testing and found that no hearing under *Daubert* was necessary. The District
19 Court’s opinion was based on a number of factors: that no modifications were made to the
20 test procedure, that the amount of DNA tested was more than 100 pg and “that the
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24 ²⁴ *People v. Henderson, supra*, at 776; *People v. Axell* (1991) 235 Cal.App.3d 836, 854.

²⁵ (2009) 602 F.Supp.2d 658.

1 PCR/STR analysis conducted in this case has been previously found reliable by other federal
2 courts, and the highest court of Maryland, and that no *Daubert* hearing is needed on that
3 procedure.”²⁶ It should be noted that since *Davis*, the debate as to what LCN testing has
4 intensified. Most experts concede that simply testing small quantities of DNA results in
5 stochastic effects that can affect the reliability of the test methods.
6

7 In *United States v. McCluskey*,²⁷ the District Court was presented with extensive
8 briefing on many issues related to DNA testing and extensive testimony on the question of
9 LCN DNA testing, and concluded as to one sample tested, that under *Daubert*, the tests
10 results were unreliable. The *McCluskey* Court’s analysis differed from that in *Davis, supra*, in
11 that the “focus for the Court, however, [was] not to establish a definition of ‘LCN testing,’
12 but to determine whether the Government’s DNA results in this case are reliable and
13 admissible,” and noted that the laboratories own protocols “declared [the sample in
14 question] to contain too small a quantity to yield the normally reliable DNA profile obtained
15 through PCR/STR testing; Item 1B23B, at 215 pg, is below the Lab’s ‘stochastic threshold’
16 and therefore ‘*in the potential danger zone of unreliable results.*’”²⁸ The Court
17 recognized that other labs may have differing protocols and obtain reliable results with lower
18 quantities of DNA than the lab in *McCluskey*, but what was important was that the lab had
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23 ²⁶ *Id.* at 672.

24 ²⁷ (2013) 954 F.Supp.2d 1224.

25 ²⁸ *Id.* at 1278 [emphasis added].

1 “empirically determined that 250 pg is its own stochastic threshold; this means that
2 the NMDPS Lab recognizes that, applying its own protocols and using its own
3 instrumentation, it expects to see stochastic effects that may render the results
4 unreliable when a sample under 250 pg is tested.”²⁹ “The question before the Court is
5 whether the Government has carried its burden of demonstrating, *by a preponderance of*
6 *the evidence*, that the LCN testing by the NMDPS Lab in this case is *nevertheless*
7 *reliable*.”³⁰

9 The *McCluskey* Court rejected the government’s argument that the fact that other labs
10 performed similar testing made the evidence in the case admissible, and focused its analysis
11 on whether the testing in the case was reliable.³¹ In determining the reliability of the test
12 results, the Court consider the presence of peak height imbalance, the increased injection
13 time made the sample ineligible for upload to CODIS, that no replicate testing was done,
14 and finally, that the analyst “*did not present a good explanation, or scientific basis*, for
15 her opinion that the profile on 1B23B was *reliable despite the clear stochastic effects of*
16 *dropout at four or five loci*.”³² The *McCluskey* Court concluded that the government had not
17 met the standard for admissibility of the testing under *Daubert*, finding the government’s
18 witness not credible and reliable and that the government had “not carried its burden of
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23 ²⁹ *Id.* at 1279 [emphasis added].

³⁰ *Id.*

³¹ *Id.*

³² *Id.* at 1283-84 [emphasis added].

1 demonstrating, by a preponderance of the evidence, that LCN testing done by the NMDPS
2 Lab is reliable and admissible” under *Daubert*.³³

3 The reasoning and analysis of *McCluskey* is compelling and applicable to this case.
4 Here, the lab has conducted validation studies but not on mixtures of more than two
5 individuals or mixtures of degraded DNA, the lab’s protocols acknowledge that data in the
6 stochastic range is subject to all of the artifacts discussed in defendant’s opening brief, allelic
7 drop-out, drop-in, peak height ratio imbalance and exaggerated stutter. The lab’s protocols
8 are not sufficient to ensure a standardized reproducible reliable result and similarly to
9 *McCluskey*, rely in large part on the analysts’ training and experience. Simply knowing that
10 artifacts occur does not make the interpretation reliable. The government must point to a
11 scientific basis for the conclusions drawn in this case.
12

13 In contrast, the District Court in *United States v. Morgan*,³⁴ found that LCN testing
14 done by the OCME³⁵ was admissible under *Daubert*. In reaching this conclusion, the *Morgan*
15 Court considered the extensive validation studies conducted by OCME in which they
16 examined over 800 samples which were the basis of the “interpretation guidelines, [which
17 were] intended to allow for consistent interpretation of LCN testing results by accounting
18 for the presence of increased stochastic effects as the quantity of DNA decreases” as well as
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23 ³³ *Id.* at 1287-88.

24 ³⁴ (2014) 53 F.Supp.3d 732

³⁵ Office of the Chief Medical Examiner, New York City.

1 its accreditation status and the fact that the New York Commission on Forensic Science
2 (“DNA Subcommittee”) has final say over accreditation decisions in New York state.³⁶

3 The Court noted that “[e]ach of the three characteristics of the crime scene sample
4 that *Morgan* has presented as problematic—the small quantity, the mixed DNA, and the
5 degradation—was tested in OCME’s validation studies” and “[m]ost importantly, for the
6 casework sample, mixture, and sensitivity studies—over one hundred distinct samples in
7 total—all allelic assignments made were correct.”³⁷ The Court also noted that the validation
8 studies met the SWGDAM guidelines.³⁸ The Court rejected the defense arguments that
9 issues related to the stochastic effects on sample including peak height ratios, allelic drop-in
10 and drop-out, were issues for the jury to decide. The *Morgan* Court in a footnote cited to
11 *McCluskey*, noting that the opinion rested, “at least partially, on that lab’s lack of certification
12 and validation of its LCN testing” and the opinion compared the OCME validation studies
13 and certification to the validation studies done in that case.³⁹

14
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16 In contrast, in *People v. Collins*,⁴⁰ a New York Supreme Court ruling, found the
17 opposite of *Morgan* for the same LCN methods used by the OCME under the state’s *Frye*
18 standard. In the OCME lab, samples with less than 100 pg of DNA are considered to be
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22 ³⁶ *Id.* at 738-39.

23 ³⁷ *Id.* at 741.

24 ³⁸ *Id.*

25 ³⁹ *Id.* at 736 n.2.

⁴⁰ (2015) 49 Misc.3d 595

1 LCN.⁴¹ The Collins Court used the more stringent analysis under the *Frye* standard after
2 both parties conceded that:

3 high sensitivity analysis increases stochastic effects which can impede proper
4 DNA analysis. The People argue that high sensitivity analysis is reliable
5 nonetheless, because OCME's protocols create conservative interpretations of
6 the test data and ensure trustworthy and sound scientific conclusions. This
7 court, after conducting a Frye hearing, will not seek to state whether the
8 People are correct; ***this court will instead consider the evidence about
9 whether the relevant scientific community generally accepts the OCME
10 protocols.***⁴²

11 The *Collins* Court noted that, "no public laboratory in the United States, other than
12 the OCME lab, employs high sensitivity analysis to develop profiles for use in criminal cases.
13 Among the labs refusing to use high sensitivity analysis is the FBI laboratory."⁴³ The Court
14 considered whether the issues raised by the defense experts, including allelic drop-in and
15 drop-out, increased stutter and peak height ratio imbalances, went to the weight of the
16 evidence, as decided by *Morgan, supra*, and rejected this analysis, concluding:

17 After all, if the experts in the DNA field cannot agree on the weight to be
18 given to evidence produced by high sensitivity analysis, it would make no
19 sense to throw such evidence before a lay jury and ask the jurors to give the
20 evidence appropriate weight.⁴⁴

21 The Court also rejected the argument adopted by *Morgan, supra*, that the certification

22 ⁴¹ *Id.* at 604-05

23 ⁴² *Id.* at 605 [emphasis added].

24 ⁴³ *Id.* at 611. The technique utilized by the OCME is different than the one utilized by SCCCL because it uses an
25 enhancement of increased amplification cycles and a statistical tool, both of which are not used by SCCCL.
However, the legal argument remains compelling.

⁴⁴ *Id.* at 612.

1 of the OCME's method by the New York State Commission carried great weight.

2 It is not just that Dr. Chakraborty, one of the members of the subcommittee,
3 has "defected," and now has testified for the defense. The more important
4 point is that no state subcommittee can be equated with the general
membership of the relevant scientific community.⁴⁵

5 Legal scholars have made this argument as well. In a recent book, INSIDE THE CELL, the
6 author Erin Murphy, a law professor at New York University School of Law, describes the
7 flaws in these types of oversight committees. Professor Murphy observes that such
8 commissions are "ill equipped to conduct the kind of ongoing scrutiny that the forensic
9 DNA testing laboratories require," with most commissions meeting two to four times a year
10 for a day or two, they rely on materials prepared by others often the very people being
11 scrutinized and at best the review conducted is a paper review of the lab's processes.⁴⁶

12
13 The *Collins* Court also rejected the validation studies and outside review conducted by
14 OCME as a conclusive basis for a finding of general acceptance.

15 *a laboratory's satisfaction with its validation results does not show*
16 *general acceptance of techniques and procedures*, if the validation studies
17 fail to create such general acceptance. And OCME's validation studies have
18 failed to create general acceptance of high sensitivity analysis. *As to audits,*
19 *they appear to test whether procedures are being implemented in*
20 *accordance with protocols, not whether the principles underlying the*
21 *procedures are valid.*⁴⁷

22
23 ⁴⁵ *Id.* at 612-13.

24 ⁴⁶ INSIDE THE CELL at 70-71.

25 ⁴⁷ 49 Misc.3d at 613 [emphasis added].

1 In this case, the Court should adopt the rationales set forth in *McCluskey* and *Collins*
2 for a several reasons. The Court must hold an evidentiary hearing on the question of
3 reliability. The test methods at issue in this case which can be fleshed out in an evidentiary
4 hearing, are similar to those in *McCluskey*. By the lab's own admission, these samples are low
5 level samples. All of the samples tested, with the exception of one, are complex mixtures of
6 at least three individuals. As in *McCluskey*, most of the data for the challenged samples fall
7 with the lab's stochastic range. The lab's manual states:

9 As a general guideline single peaks should not be called as homozygote alleles
10 unless the peak is above 200 rfu for standard and reduced injection times, and
11 above 300 rfus (larger loci) - 400 rfu (smaller loci) for enhanced injection
12 times. Different stochastic thresholds can be applied to individual loci. ***The***
13 ***assignment of stochastic thresholds should be made with the following***
14 ***in mind:*** presence of degradation and/or inhibition, zygoty and peak heights
15 at flanking loci, stutter, and allele size. The threshold for a particular locus
16 should generally not exceed the threshold set for a smaller locus within the
17 same dye channel. Loci of similar size in different dye channels should have
18 similar thresholds. Selection of the stochastic threshold should be documented
19 and justified when necessary.⁴⁸

16 In the latest protocol, a sentence was added that further undermines the reliability of the use
17 of this type of data:

18 These thresholds were determined ***using low level single source samples***
19 and ***may not be suitable for all mixture samples.***⁴⁹

20 This language, as well as the description of the criteria to look for in data, indicates two
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24 ⁴⁸ FB Manual, Interpretation, Sec. 21, pg 9 of 31 (Issue date: 11/16/20; rev 8)

⁴⁹ FB Manual, Interpretation, Sec. 21 pg 9 of 32 (Issue date: 11/16/20; rev 10)

1 important points: the lab has not done sufficient validation to determine what stochastic
2 thresholds *actually apply* to complex mixtures such as the ones found here; and that the
3 stochastic fluctuations at this level lead to unreliable interpretations of the data. As in
4 *McCluskey*, that lab has offered no scientific basis for the reliability of the testing in this case
5 other than a single published study that does not address issues relation to the stochastic
6 threshold and a declaration which focuses on the validity of the Identifiler Plus kit absent
7 any discussion of stochastic effects and how the lab can issue the reliability of the testing
8 using the methodology laid out in its protocols.

10 As in *Collins*, the government seems to be in part relying on the fact that the lab is
11 audited and accredited in establishing that the lab follows generally accepted protocols.
12 However, as the *Collins* court noted, the audit process does not ensure that the protocols are
13 generally accepted, rather the audit process “*appear[s] to test whether procedures are*
14 *being implemented in accordance with protocols, not whether the principles*
15 *underlying the procedures are valid.*⁵⁰

17 This Court must hold a hearing to assess whether the protocols and methods used in
18 this case are generally accepted within the larger scientific community as reliable.

19 **1. The lab has failed to adequately validate their enhanced**
20 **methodology on complex mixtures**

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24 ⁵⁰ 49 Misc.3d at 613 [emphasis added].

1 As set forth in the defendant's supplemental brief regarding the PCAST report, the
2 lab has failed to adequately validate their enhanced methodology on mixed samples. In
3 response to the defendant's argument regarding the validation studies, the government has
4 submitted a declaration from Ms. Barloewen and a number of summaries of validations
5 studies, some of which have not previously produced to the defense.⁵¹ None of the
6 summaries seem to apply

8 **II. THE MANNER IN WHICH THE LAB APPLIES THE LIKELIHOOD
9 RATIO (LR) IS NOT GENERALLY ACCEPTED.**

10 The government cites a number of out of state cases that hold the likelihood ratio is a
11 generally accepted method for applying a statistical weight to DNA evidence.⁵² However,
12 that does not end the discussion. In *Venegas*, the Supreme Court held that the application of
13 the while the "modified ceiling" principle that was described by the NRC was generally
14 accepted, the application of this rule by the FBI was defective and did not pass muster under
15 the third prong of *Kelly* and that the question of the application of the generally accepted
16 methods was not a question of weight for a jury to determine.⁵³ The Supreme Court
17 concluded that

18 the trial court erred in ruling that the FBI's failure to follow correct scientific
19 procedures by using the unduly narrow floating bins was a matter affecting only the
20 weight of the evidence for the jury's consideration.⁵⁴

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23 ⁵¹ The defense team has still not received the underlying studies.

⁵² Opposition at 8-9.

⁵³ *People v. Venegas* (1998) 18 Cal.4th 47, 92.

⁵⁴ *Id.* at 91-92.

1
2 There are a number of reasons that the cases cited by the government do not control this
3 Court's determination of whether or not the likelihood ratio is generally accepted, including
4 the fact that none are California cases, the application of that rule in this case is a question of
5 admissibility not weight.

6 Here, the defendant has asserted that the likelihood ratio statistic calculations done by
7 SCCCL is not generally accepted because it does not address issues such as the amount of
8 drop-out expected in samples such as the ones tested here, with low level, complex mixtures
9 in which allelic drop-out must be assumed.⁵⁵ The government misconstrues the defendant's
10 argument regarding the use of the LR with mixtures.⁵⁶ While the LR can be used in a way
11 that allows artifacts, like drop-out to be assessed, SCCCL has not adopted any of the
12 methods that do assess the artifacts. The use of the LR with no assessment of the
13 probability of drop-out is where the problem with the analysis arise and is the heart of the
14 defendant's arguments.
15

16
17 **III. SARGON APPLIES TO EVERY CASE IN CALIFORNIA.**

18 In interpreting Evidence Code §§ 801 and 802, the California Supreme Court clarified
19 these long standing rules regarding expert testimony in *Sargon*.⁵⁷ The Court's gatekeeping role
20 "means trial courts are duty-bound to vet the challenged expertise to determine if it meets
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23 ⁵⁵ Defendant's Motion to exclude at pg 35-39

24 ⁵⁶ Opposition at 10.

⁵⁷ (2012) 55 Cal.4th 747.

1 evidentiary standards for admission that the matter relied on must provide a *reasonable basis for*
2 *the particular opinion offered*, and that an expert opinion based on speculation or conjecture is
3 inadmissible.”⁵⁸ The government in its opposition brief seems to imply that *Sargon* somehow
4 does not apply to cases involving DNA evidence. It is the defendant’s contention that *Sargon*
5 clarified that even if an expert’s opinion passes muster under the *Kelly* standard, the Court has a
6 further duty to inquire into the *underlying logic* and possible speculative nature of the *opinion*
7 itself, rather than the underlying methodology. As laid out in defendant’s opening brief, under
8 Evidence Code §§ 801 and 802, “the trial court acts as a gatekeeper to exclude expert opinion
9 testimony that is (1) based on matter of a type on which an expert *may not reasonably* rely, (2)
10 based on reasons *unsupported by the material on which the expert relies*, or (3) speculative.”⁵⁹

13 The Supreme Court further explained the trial court’s role this way:

14 The trial court’s preliminary determination whether the expert opinion is
15 founded on sound logic is not a decision on its persuasiveness. The court
16 must not weigh an opinion’s probative value or substitute its own opinion
17 for the expert’s opinion. Rather, the court must simply determine *whether*
18 *the matter relied on can provide a reasonable basis for the opinion or*
19 *whether that opinion is based on a leap of logic or conjecture*. The court
20 does not resolve scientific controversies. Rather, it conducts a
21 “circumscribed inquiry” to “determine whether, as a matter of logic, the
22 studies and other information cited by experts adequately support the
23 conclusion that the expert’s general theory or technique is valid.”⁶⁰

24 Contrary to the government’s analysis of *Sargon*, the Court’s assessment is not just whether

25 ⁵⁸ *Id.* at 770 [quoting *Lockheed Litigation Cases* (2004) 115 Cal.App.4th 558, 564.][emphasis added].

⁵⁹ *Id.* at 771-772 [emphasis added].

⁶⁰ *Id.* at 772 [quoting Imwinkelried & Faigman, Evidence Code Section 802: The Neglected Key to Rationalizing the California Law of Expert Testimony (2009) 42 Loyola L.A. L.Rev. 427, at p. 449.]

1 or not an opinion is speculative, but also whether the opinion is reasonable and not based in a
2 leap of logic or conjecture. The Court's inquiry also covers the basis of the opinion, in other
3 words, do the materials which the expert relies provide a basis for the opinion rendered. As set
4 forth above and in the defendant's opening brief, the defendant has made a showing that the
5 method of testing and the results obtained, are unreliable and are not sufficient to support the
6 analyst's opinions of inclusion.

7
8 **IV. THE DEFENDANT IS ENTITLED TO A THIRD PRONG HEARING AS A**
9 **MATTER OF LAW.**

10 The government seems to argue that the declaration of Brooke Barloewen is sufficient to
11 satisfy their burden under the third prong of *Kelly*.⁶¹ As the Supreme Court clearly stated the
12 third prong of *Kelly* is still a prerequisite for admissibility.

13 DNA evidence is different. Unlike fingerprint, shoe track, bite mark, or ballistic
14 comparisons, which jurors essentially can see for themselves, questions concerning
15 whether a laboratory has adopted correct, scientifically accepted procedures for
16 generating autorads or determining a match depend almost entirely on the technical
17 interpretations of experts. [citation omitted]. Consideration and affirmative resolution of
18 those questions constitute a prerequisite to admissibility under the third prong of *Kelly*.⁶²

18 **CONCLUSION**

19 The defendant requests this Court to exclude the DNA evidence on two grounds. First,
20 that it does not pass muster under either the first or third prong of *Kelly*, and the government has
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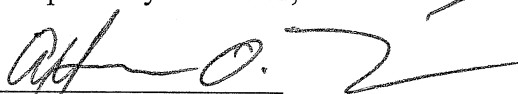
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23
24 ⁶¹ Opposition at 10.

⁶² *Venegas, supra*, 18 Cal. 4th at 81.

1 failed to satisfy their burden of proof showing that the interpretation of complex low level
2 mixtures is generally accepted. Second, the government has proffered no qualified expert nor
3 literature to address the first prong. Third, the data and facts of the DNA testing do not logically
4 support a statement of inclusion under *Sargon* and Evid. Code §§ 801 and 802.
5

6 Date: December 2, 2016

Respectfully submitted,

7 

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10 IN THE SUPERIOR COURT OF CALIFORNIA FOR THE
11 COUNTY OF SANTA CLARA

12 PEOPLE OF THE STATE OF
13 CALIFORNIA,

14 PLAINTIFF,

15 VS.

16 ANTOLIN GARCIA-TORRES,

17 DEFENDANT

) CASE NO.: 213515

) REPLY TO GOVERNMENT OPPOSITION
) (Motion to Exclude DNA Evidence)

) Proof of Service

18 I am a citizen of the United States and employed in Santa Clara County. I
19 am over the age of eighteen years and not a party to this action. My business address is
20 701 Miller Street, San Jose, CA 95110.

21 On December 2, 2016, I served the within *Reply to Government*
22 *Opposition* (Motion to *Exclude DNA Evidence*) on the Plaintiff in this action by

23 //

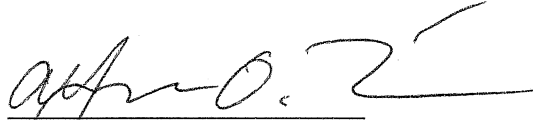
24 //

25 REPLY TO GOVERNMENT OPPOSITION
(MOTION TO EXCLUDE DNA EVIDENCE)

1 serving a true and correct copy on the District Attorney, c/o David Boyd, at Department
2 40.

3 I declare under penalty of perjury that the foregoing is true and correct.

4 Executed on this 2nd day of December, 2016, at San Jose, California.

5 
6 _____
7 Alfonso O. Lopez
8 Deputy Alternate Defender
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