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NO. 67456-1-I

#### COURT OF APPEALS OF THE STATE OF WASHINGTON

**DIVISION I** 

#### STATE OF WASHINGTON,

Respondent,

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KING COUNTY DISTRICT COURT, WEST DIVISION, Judge Mark Chow, and KING COUNTY DISTRICT COURT, EAST DIVISION, Judge David Steiner, and KING COUNTY DISTRICT COURT, SOUTH DIVISION, Judge Darrell Phillipson, BRETT R. BALLOW, and LESLIE P. FAUSTO,

Appellants.

APPEAL FROM THE SUPERIOR COURT FOR KING COUNTY THE HONORABLE JUDGE RONALD KESSLER

#### BRIEF OF RESPONDENT

DANIEL T. SATTERBERG -King County Prosecuting Attorney

> JESSICA MURPHY MANCA Deputy Prosecuting Attorney Attorneys for Respondent

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#### A. ISSUE PRESENTED

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In a DUI prosecution, RCW 46.64.506(4) provides that the results of a "breath test performed by any instrument approved by the state toxicologist shall be admissible" at a criminal trial so long as the requirements of that statutory provision are met. Should a valid breath alcohol test be admitted when it meets these requirements, or do ER 702, <u>City of Fircrest v. Jensen</u>, 158 Wn.2d 384, 143 P.3d 776 (2006), <u>City of Seattle v. Clark-Munoz</u>, 152 Wn.2d 39, 93 P.3d 141 (2004), <u>State v. Cauthron</u>, 120 Wn.2d 879, 846 P.2d 502 (1993), and related authorities, mandate that the State also introduce evidence of the Washington State Toxicology Laboratory Division's ("WSTLD's") calculated "confidence interval" applicable to that breath test?

#### B. STATEMENT OF THE CASE

#### 1. PROCEDURAL HISTORY

Brett Ballow and Leslie Fausto were each separately arrested in King County, Washington, for driving while under the influence ("DUI"). During their arrests, Ballow and Fausto each consented to take a breath alcohol test. Ballow's two breath samples showed a breath alcohol content of .134 and .131.<sup>1</sup> CP 1446. Fausto's two breath samples showed a breath alcohol content of .198 and .189. CP 1165.

After the State charged Ballow and Fausto with DUI, the defense moved to suppress the breath test under a countywide order of suppression issued in <u>State v. Ahmach, et al.</u>, King County District Court Case No. C00627921 (Jan. 30, 2008).<sup>2</sup> CP 29. In <u>Ahmach</u>, the district court held that a pattern of negligent practices at WSTLD had compromised the laboratory's breath test results. <u>Id.</u> Because WSTLD addressed the problems identified in <u>Ahmach</u> and obtained breath test accreditation from the American Society of Crime Laboratory Directors Laboratory Accreditation Board ("ASCLD/LAB")—a distinction which only four laboratories in the world have achieved—the State asked the <u>Ahmach</u> panel to reconsider its ban on breath test results. CP 1013-26, 1106-19. The State's motion was granted, and Ballow's and Fausto's cases were consolidated for a hearing before the same panel of King

<sup>&</sup>lt;sup>1</sup> All breath alcohol measurements are expressed in grams per 210 liters.

<sup>&</sup>lt;sup>2</sup> LCrRLJ 8.2(2) allows the Presiding District Court Judge to designate a motion as one of "countywide significance" upon the motion of a judge or a party. When a three-judge panel rules on an issue of countywide significance, the other King County District Court judges routinely adopt the ruling at a party's request, and generally do so without further briefing, testimony, or argument.

County District Court judges that decided <u>Ahmach</u>. CP 29; 1058-59.

The original purpose of the hearing was to evaluate whether the court should lift the <u>Ahmach</u> order of suppression. CP 1013-22, 1106-15. However, after the hearing was set, Ballow and Fausto abandoned their <u>Ahmach</u> challenges entirely—both in briefing and at the hearing. CP 131-32, 715, 1073-75, 1255-1328. Instead, Ballow and Fausto raised a wholly new issue, moving to suppress their breath test results because those results did not include a "corresponding measure of the reliability of the reading," which is also referred to as an "uncertainty" measurement or a "confidence interval." CP 20, 22, 131-32, 715, 1073-75, 1255-1328.

The five-day hearing was held from August 2 to August 6, 2010. CP 3. During the hearing, the State presented the testimony of Dr. Fiona Couper, the Washington State Toxicologist, who holds a Ph.D. in forensic medicine; Jason Sklerov, a forensic scientist and WSTLD quality assurance manager; and Rod Gullberg, a WSTLD supervisor and research analyst who is widely recognized as "the only known authority" on measurement uncertainty in breath testing. CP 142, 375, 469-70, 521, 1029-43. The defense presented the testimony of Dr. Emery, a professor of mechanical

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engineering who holds a Ph.D. in mechanical engineering and specializes in the field of metrology (the science of measurements). CP 611-12. Dr. Emery has not published any work in the area of biological testing, and has no experience applying metrology to the field of biological testing. CP 524, 615-17.

In a ruling issued on September 20, 2010, the district court lifted the countywide order of suppression in Ahmach. CP 29-30. But the district court also issued a separate order governing confidence intervals for breath tests. CP 20-50. In its "Order Suppressing Defendant's Breath-Alcohol Measurements in the Absence of a Measurement for Uncertainty," the district court "place[d] the State on notice that every discovery packet supplied to defendants must contain the confidence interval for any breathalcohol measurement the State intends to offer into evidence in that case." CP 45. The court further held that breath alcohol tests would be inadmissible without an accompanying confidence interval calculation. CP 45, 48. Finally, the court held that the State's failure to include confidence interval in discovery would be Brady<sup>3</sup> violation that would justify reversal of a DUI conviction. CP 45. Acknowledging that its decision was unprecedented, the district

<sup>&</sup>lt;sup>3</sup> Brady v. Maryland, 373 U.S. 83, 83 S. Ct. 1194, 10 L. Ed. 2d 215 (1963).

court proclaimed that "precedent will never be allowed to overcome the determination of a good judge to do justice in each and every case." CP 41.

On October 20, 2010, the State sought a writ of review in King County Superior Court pursuant to RCW 7.16.040. CP 6. The parties agreed that the writ of review should issue under the standard announced by <u>City of Seattle v. Holifield</u>, 170 Wn.2d 230, 244, 240 P.3d 1162 (2010).<sup>4</sup>

After considering the arguments of the parties and the record on appeal, the superior court disagreed "that uncertainty statements must be offered by the prosecuting authority as a judicially-imposed minimum requirement in addition to the RCW 46.61.506 requirements." CP 997. Accordingly, the superior court reversed the district court, holding that the district court "went too far in deciding that in these cases, and, presumably, in all future cases, the so-called uncertainty statement is a foundational requirement . . . before the court even begins its gatekeeper function." CP 995. Under the superior court's order, the trial court

<sup>&</sup>lt;sup>4</sup> There is no right to seek an interlocutory appeal from courts of limited jurisdiction. "[T]he only method of review of interlocutory decisions in courts of limited jurisdiction is still the statutory writ." <u>City of Seattle v. Williams</u>, 101 Wn.2d 445, 455, 680 P.2d 1051, 1057 (1984). Accordingly, the criteria for granting a writ of review is similar to that governing a decision to grant interlocutory review. <u>Holifield</u>, 170 Wn.2d at 244.

may continue to exercise its discretion under ER 403 and 702 in individual cases. CP 997. Furthermore, WSTLD continues to make uncertainty calculations "readily available" to all parties. CP 997.

The petitioners moved this Court for discretionary review of the superior court's decision, and this Court accepted discretionary review on the question of whether ER 702 and related authorities require the State to introduce confidence intervals as an additional foundational prerequisite to the admissibility of an otherwise valid breath alcohol test. Order Granting Discretionary Review.

#### 2. SUBSTANTIVE FACTS

The evidence at the district court hearing was largely undisputed. A measurement is designed to quantify the true value of a property. CP 474. The concept of measurement "uncertainty," which is similar to the concept of "margin of error," expresses the idea that the true value of the measurement can never be known. CP 203. Instead, every reported measurement is actually a range of values, and the true value of the measurement exists within that range. CP 623.

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*All* measurements have some uncertainty associated with them. CP 21, 203, 208, 316. The existence of uncertainty "does *not* imply doubt about the validity of a measurement." CP 490 (emphasis added). Rather, uncertainty calculations provide a qualitative description of a measurement's accuracy. CP 474, 623, 629. Accuracy is simply "the ability of a measurement to report the true value." CP 474.

One method of expressing measurement variability is a "confidence interval." A confidence interval expresses the likelihood that the "true value" of a measurement falls within a specific interval or range of values. CP 22-23. The true value could be higher than the reported value, it could be lower than the reported value, or it could be the reported value itself. CP 397, 510. Statistically, the reported value is the best estimate of the measurement's true value. CP 397, 511.

Uncertainty is recognized—*as an abstract concept*—in all of the sciences. CP 478. The idea that every measurement has some variability—from a scale to a yardstick to a radar measurement of speed to an election poll—is familiar to lay people and scientists alike. Practically speaking, however, the scientific community is not familiar with methods for calculating and

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expressing measurement variability in the context of breath alcohol tests. CP 472.

As a practical matter, calculations of measurement variability are almost nonexistent in the forensic toxicology and biological testing communities. CP 478, 494, 516-17, 596. Within these communities, there is considerable debate about the value of measurement uncertainty and no general consensus as to how it should be calculated or expressed. CP 210-13, 243, 387, 478, 517. There is no generally accepted methodology for calculating the variability of a breath measurement or the variability of other biological samples. CP 387-88, 517.

The practice of reporting breath test results without uncertainty is generally accepted in the forensic science, clinical, medical, and biological testing communities. CP 394, 488, 516. Most forensic laboratories, medical laboratories, and clinical laboratories throughout the country do not report measurement variability with their test results. CP 243, 253, 386, 517, 682-84. The largest accrediting agencies for forensic and medical laboratories do not require measurement variability to be expressed with test results. CP 361-63, 463, 626-27, 654. Aside from WSTLD, *no breath test program in the United States measures or* 

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reports uncertainty with breath test results. CP 29, 213, 386, 473. No other state laboratory routinely publishes uncertainty calculations or expresses a breath test measurement with a confidence interval. CP 27, 213.

WSTLD is on the cutting edge of calculating measurement variability, not only in the field of breath testing, but in the broader fields of laboratory forensics and laboratory medicine. CP 33-34, 213. In 2009, Mr. Gullberg developed an algorithm that calculates confidence intervals for breath test results. CP 390-93. His methodology is so new that it has not been externally validated. CP 391, 460-61, 512-13.

Using Mr. Gullberg's novel methodology, WSTLD will calculate the confidence interval of any individual breath test upon request.<sup>5</sup> CP 223. The Washington State Patrol Breath Test website provides information about how to request a confidence interval calculation. CP 224. As of August 2010, the WSTLD performed over 650 uncertainty calculations through this procedure. CP 227, 374.

<sup>&</sup>lt;sup>5</sup> Regarding WSTLD's efforts to develop confidence interval calculations and make those calculations publicly available, the district court remarked, "[N]o good deed goes unpunished, I suppose is the bottom line for that." CP 716.

#### C. ARGUMENT

#### 1. SUMMARY OF ARGUMENT.

The district court erred by imposing confidence intervals as a foundational requirement under ER 702. Confidence intervals may be relevant to challenge the *weight* of the breath test result at trial, once the statutorily-defined foundational requirements of RCW 46.61.506(4) are satisfied, but do not bear on the *admissibility* of the results themselves.<sup>6</sup>

- (i) The person who performed the test was authorized to perform such test by the state toxicologist;
- The person being tested did not vomit or have anything to eat, drink, or smoke for at least fifteen minutes prior to administration of the test;
- (iii) The person being tested did not have any foreign substances, not to include dental work, fixed or removable, in his or her mouth at the beginning of the fifteen-minute observation period;
- (iv) Prior to the start of the test, the temperature of any liquid simulator solution utilized as an external standard, as measured by a thermometer approved of by the state toxicologist was thirty-four degrees centigrade plus or minus 0.3 degrees centigrade;
- (v) The internal standard test resulted in the message "verified";
- (vi) The two breath samples agree to within plus or minus ten percent of their mean to be determined by the method approved by the state toxicologist;
- (vii) The result of the test of the liquid simulator solution external standard or dry gas external standard result did lie between .072 to .088 inclusive; and
- (viii) All blank tests gave results of .000.

<sup>&</sup>lt;sup>6</sup> The eight foundational requirements under RCW 46.61.506(4) are:

Furthermore, the district court erred by requiring WSTLD to produce confidence intervals as a foundational requirement. The district court reasoned that confidence intervals are required because the concept of measurement variability is generally accepted within the broad scientific community. This was error, because breath test results without confidence intervals are *also* generally accepted within the scientific community.

The district court intended its unprecedented decision to "serve as a catalyst" to move the forensic science community toward "new, better practices." CP 39, 41. In so ruling, however, the district court usurped the role of the legislature, which has clearly defined the foundational requirements for admission of a breath test result, the role of the Washington State Toxicologist, who has exclusive authority to approve methods for breath test analysis, and the function of the scientific community, which is the proper body to debate the merits of adopting a particular scientific method.

#### 2. MEASUREMENT VARIABILITY GOES TO THE WEIGHT OF THE BREATH TEST RESULT, NOT ITS ADMISSIBILITY.

Confidence intervals are nothing more than a description of a measurement's accuracy. These intervals describe the likelihood that the true value of a breath test measurement falls within a certain range of values. However, statistically, the reported breath test result is still the best estimate of the measurement's true value.

The legislature has explicitly stated that challenges to the accuracy of a breath test go to the weight of the evidence not its admissibility. RCW 46.61.506(4); see also Jensen, 158 Wn.2d at 399 ("The legislature has made clear its intention to make BAC test results fully admissible once the State has met its prima facie burden."). Although a court may consider the relevance and reliability of scientific evidence in any particular case, neither ER 702 nor  $\underline{Frye}^{7}$  allows the court to impose *foundational* accuracy or certainty requirements beyond those defined by statute or generally accepted within the relevant scientific community.

If a scientific test is generally accepted by the relevant scientific community, "lack of certainty . . . goes to the weight to be given the [expert's] testimony, not to its admissibility." <u>State v.</u>

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<sup>&</sup>lt;sup>7</sup> Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

<u>Stenson</u>, 132 Wn.2d 668, 718, 940 P.2d 1239 (1997). "Rule 702 does not require any particular degree of certainty for admissibility." 5D Karl B. Tegland, <u>Washington Practice: Courtroom Handbook on</u> <u>Washington Evidence</u> 379 (2011-12 ed.). Generally, "an expert's lack of certainty goes to the weight of the testimony, not its admissibility." <u>State v. Lord</u>, 117 Wn.2d 829, 853-55, 822 P.2d 177 (1991); <u>see also State v. Mitchell</u>, 102 Wn. App. 21, 27, 997 P.2d 373, 376 (2000) (holding that, under ER 702, an expert is allowed to express an opinion that a certain outcome is "possible"); <u>State v.</u> <u>Batten</u>, 17 Wn. App. 428, 437-38, 563 P.2d 1287 (1977) (holding that an expert's opinion that two hair samples "could have" come from the same person was admissible notwithstanding the expert's inability to "state categorically" that the two samples came from the same person).

Similarly, challenges to the accuracy of a scientific test generally do not render the results of that test inadmissible. Unless laboratory error rates are so serious as to render the results of a scientific test unreliable, error rates generally go to the weight of the evidence not its admissibility. <u>State v. Gregory</u>, 158 Wn.2d 759, 830, 147 P.3d 1201, 1239 (2006); <u>State v. Copeland</u>, 130 Wn.2d 244, 270, 922 P.2d 1304 (1996). Other challenges that affect

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accuracy or reliability have been held to be matters of weight, not admissibility. <u>Gregory</u>, 158 Wn.2d at 829-30 (deviations from scientific protocol); <u>Ludvigsen v. City of Seattle</u>, 162 Wn.2d 660, 681-82, 174 P.3d 43 (2007) (Madsen, J., concurring) (same); <u>State</u> <u>v. Kalakosky</u>, 121 Wn.2d 525, 543, 852 P.2d 1064 (1993) (same); <u>City of Seattle v. Allison</u>, 148 Wn.2d 75, 86, 59 P.3d 85 (2002); (variances in the temperature of breath test simulator solution); 5B Karl B. Tegland, <u>Washington Practice: Evidence Law &</u> <u>Practice</u> § 702.18 (5th ed. 2007) ("objections to the manner in which [scientific] theories and methods were applied in the case at hand").

Similarly, courts throughout the country agree that the variability of a breath test measurement goes to the weight of the breath test result, not its admissibility. <u>See, e.g.</u>, <u>People v. McNeal</u>, 210 P.3d 420, 431 (Cal. 2009) ("Defense evidence [of the variability between a breath test measurement and a blood test measurement] is relevant to rebut the presumption that the defendant was intoxicated, but not to remove the presumption altogether"); <u>State v. Kuhl</u>, 755 N.W.2d 389, 399 (Neb. 2008) (holding that a defendant was not entitled to adjust his breath test result for margin of error as a matter of law because margin of error

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is a question for the trier of fact); <u>State v. Damon</u>, 119 P.3d 1194, 1199 (Mont. 2005) ("Criticisms of specific applications of procedures or concerns about the accuracy of test results do not render a scientific theory and methodology invalid or destroy its general acceptance"); <u>Guitierrez v. State</u>, 497 S.E.2d 898, 899 (Ga. 1997) ("[T]he fact that a [breath] testing procedure has some margin for error or may give an erroneous result under certain circumstances relates to the weight, rather than the admissibility of the test results"); <u>State v. Downie</u>, 569 A.2d 242, 251 (N.J. 1990) (holding that a 2.3% margin of error did not preclude the admissibility of the breath test result); <u>State v. Johnson</u>, 717 S.W.2d 298, 305 (Tenn. Crim. App. 1986) (holding that margin of error and other inaccuracies in a breath test result "go to the weight of the evidence, not its admissibility").

A test administered in compliance with WSTLD procedures and protocols meets the foundational requirements for admissibility under RCW 46.61.506(4), and meets the <u>Frye</u> standard for accuracy and reliability within the scientific community. CP 484-86, 994; <u>State v. Straka</u>, 116 Wn.2d 859, 870, 810 P.2d 888 (1991); <u>State v. Ford</u>, 110 Wn.2d 827, 833, 755 P.2d 806 (1988). In a DUI case, a certified breath test technician and forensic toxicologist are

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qualified as experts by reason of specialized scientific and technical knowledge, and their testimony will "assist the trier of fact to understand the evidence or to determine a fact in issue." ER 702. When all of the foregoing requirements are met, the breath test results are presumptively admissible in a DUI case. Challenges to the accuracy of the test, including measurement variability, go to the weight of the breath test result, not its admissibility.

#### 3. THE DISTRICT COURT ERRED IN ITS APPLICATION OF ER 702.

WSTLD is the *only* breath test program in the United States to measure uncertainty. Other than WSTLD, no other state laboratory routinely publishes confidence intervals for breath tests. Even beyond the forensic breath test community, the relevant scientific communities of forensic science, laboratory medicine, and clinical medicine do not express measurement variability with their test results. For example, when clinical laboratories report test results to doctors and patients, they typically do not report uncertainty with those results. CP 244, 982. Similarly, federal drug testing programs do not report uncertainty with urine test results. RP 253. Nevertheless, the district court held that, pursuant to ER 702, it can *require* the relevant scientific community to adopt a new practice that is not generally accepted within that community. What emerges from the district court's opinion is a clear desire to "serve as a catalyst" for the forensic science and biological testing communities. CP 39, 41. However, ER 702 exists to ensure that evidence is considered reliable within the relevant scientific community, not to encourage the relevant scientific community to adopt new scientific practices. Accordingly, the district court's application of ER 702 exceeded its authority under that rule.

In some circumstances, uncertainty calculations may be helpful to the trier of fact. The State does not contend otherwise. In fact, the State has expended significant effort to develop a method for calculating confidence intervals and to make those calculations publicly available. But there is a fundamental difference between recognizing that confidence intervals may add value to a breath test measurement and holding, as the district court did in this case, that an otherwise reliable and accurate breath test result is *unhelpful* to the trier of fact without such a calculation. The superior court properly held that the district court erred in its

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unprecedented application of ER 702, and that decision should be affirmed.

#### a. Once A Scientific Procedure Meets <u>Frye</u>, General Acceptance Of *Other* Scientific Procedures Does Not Preclude Admissibility Under ER 702.

In this case, the district court erroneously conflated the analysis of "helpfulness" under ER 702 with the analysis of whether a scientific principle is generally accepted under <u>Frye</u>. Despite acknowledging that the WSTLD breath test program meets <u>Frye</u> standards for accuracy and reliability, the district court held that a breath test result without a confidence interval is unhelpful to the trier of fact because the concept of measurement variability is generally accepted within the entire scientific community.

The district court's analysis was backward. To conclude that confidence intervals are a foundational requirement under <u>Frye</u> or ER 702, the district court would have had to find that breath test results *without* confidence intervals are *not* generally accepted within the relevant scientific community. The court did not—and could not—reach that conclusion based on the evidence before it. Instead, the court interpreted ER 702 to require forensic scientists

to adapt a conceptually accepted theory to a particular application of science. This was clear error.

"The rationale of the <u>Frye</u> standard, which requires general acceptance in the relevant scientific community, is that expert testimony should be presented to the trier of fact only when the scientific community has accepted the reliability of the underlying principles." <u>Copeland</u>, 130 Wn.2d at 255. The <u>Frye</u> standard recognizes that "scientists *in the field* must make the initial determination whether an experimental principle is reliable and accurate" because "judges do not have the expertise required to decide whether a challenged scientific theory is correct," and therefore "defer this judgment to scientists." <u>Id.</u> (quoting <u>Cauthron</u>, 120 Wn.2d at 887) (emphasis added).

If a scientific principle satisfies <u>Frye</u>, the court performs a two-part analysis under ER 702. First, the court considers whether the expert qualifies as an expert, and, second, whether the expert's testimony would be helpful to the trier of fact. <u>Copeland</u>, 130 Wn.2d at 256. Evidence is helpful to the trier of fact if it "will assist the trier of fact to understand the evidence or to determine a fact in issue." ER 702. "Courts generally interpret possible helpfulness to the trier of fact broadly and will favor admissibility in doubtful

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cases." <u>Miller v. Likins</u>, 109 Wn. App. 140, 148, 34 P.3d 835 (2001) (quotation omitted).

The question of whether scientific evidence is "helpful" to the jury is primarily a question of *relevance*. In re Det. of Halgren, 124 Wn. App. 206, 219-20, 98 P.3d 1206 (2004); <u>State v. Greene</u>, 139 Wn.2d 64, 73, 984 P.2d 1024 (1999); <u>State v. Janes</u>, 121 Wn.2d 220, 235-36, 850 P.2d 495 (1993). ER 702 also allows the trial court to address laboratory mistakes or errors that are so serious as to render a test result unreliable in a particular case:

If there is a *precise problem* identified by the defense which would render the test *unreliable*, then the testimony might not meet the requirements of ER 702 because it would not be helpful to the trier of fact. In other words, although the possibility of a mistake or human error in a particular case is indeed pertinent, the trial court is best suited to address these factual matters.

<u>Cauthron</u>, 120 Wn.2d at 890 (emphasis added); <u>see also Copeland</u>, 130 Wn.2d at 270 ("Under ER 702, if the lab error or error rates are so serious that results are not helpful to the jury, the trial court may in its discretion rule the evidence inadmissible"); <u>Kalakosky</u>, 121 Wn.2d at 541 ("If the testimony before the trial court shows that a

given testing procedure was so flawed as to be unreliable then the

results might be excluded because they are not 'helpful to the trier of fact'").

While ER 702 allows a trial court to evaluate the relevance and reliability of evidence in any particular case, it is not a substitute for <u>Frye</u>. In this case, the district court applied a modified version of <u>Frye</u> to determine whether evidence was helpful to the trier of fact under ER 702. Specifically, the district court determined that the concept of measurement variability is generally accepted within the scientific community; therefore, it concluded that a breath test result without measurement variability is unhelpful to the trier of fact. The district court transposed the requirements of ER 702 and <u>Frye</u>, and its decision is not supported by any authority applying either rule.

The district court's reasoning is fundamentally flawed because the question under <u>Frye</u> is whether a particular scientific theory is generally accepted within the relevant scientific community, not whether other scientific theories are also generally accepted. For example, in the context of DNA analysis, the general acceptance of one statistical model does not preclude the use of another statistical model that is also generally accepted. <u>Copeland</u>, 130 Wn.2d at 1304; <u>State v. Bander</u>, 150 Wn. App. 690, 717, 208

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P.3d 1242, 1255 (2009) ("That some forensic scientists may prefer the LR [likelihood ratio] approach to a PE [probability of exclusion] calculation is of no moment. *Frye* does not require unanimity. Just because the PE method may sit lower on some scientists' preference hierarchy does not mean that it is not generally accepted as a valid interpretive technique.").

If the court's role under <u>Frye</u> "is not to evaluate the merits of [a particular] theory," <u>Bander</u>, 150 Wn. App. at 717, then surely that is not the court's role under ER 702. Whether analyzed under <u>Frye</u> or ER 702, there is simply no authority for the district court's conclusion that general acceptance of the concept of measurement variability renders a breath test result invalid and inadmissible without an expression of that variability.

The appellants rely heavily on <u>Cauthron</u> for the principle that a measurement may be excluded as unhelpful if the jury is not provided "context" for the measurement. Appellant's Br. at 19-23. In <u>Cauthron</u>, the Washington Supreme Court concluded that testimony about a DNA "match" is unhelpful to the jury without an expression of statistical probability. However, the appellants' argument fails to appreciate that *a committee of scientists from the relevant scientific community* determined that DNA results without

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statistical probability were *not* generally accepted. <u>Cauthron</u>, 120 Wn.2d at 885; <u>see also State v. Russell</u>, 125 Wn.2d 24, 44, 882 P.2d 747 (1994) (acknowledging that "[t]he Committee was formed in 1990 to address the general applicability and appropriateness *of the use of DNA technology in forensic science*") (emphasis added). In fact, the Committee described a DNA result without statistical probability as "meaningless." <u>Cauthron</u>, 120 Wn.2d at 907. In keeping with the <u>Frye</u> standard, the Supreme Court simply adopted the opinion of the relevant scientific community, holding that the "[t]estimony of a match in DNA samples, without the statistical background or probability estimates, is *neither based on a generally accepted scientific theory* nor helpful to the trier of fact." <u>Id.</u> (emphasis added).

In this case, however, the scientific community overwhelmingly agrees that breath test results are neither meaningless nor unreliable without a confidence interval. A confidence interval may provide greater precision for a measurement, and therefore may be helpful to the trier of fact, but confidence intervals are not necessary to the reliability, accuracy, or relevance of the breath test measurement itself. There is another critical difference between DNA analysis and breath tests measurements that limits <u>Cauthron</u>'s applicability to this case. A DNA "match" is a *qualitative* inference derived from statistical probability. Any qualitative inference requires an explanation of how that inference was reached. In the context of DNA analysis, an expert infers a "match" through a statistical probability model. Therefore, a statistical probability model explains and provides context for the qualitative inference that two DNA profiles are a "match." But the appellants' own expert testified that the concept of measurement uncertainty does not apply to qualitative inferences. CP 693. Rather, measurement uncertainty applies only to *quantitative* measurements. CP 693.

In contrast to the qualitative inferences in DNA analysis, a breath test result is a quantitative measurement, similar to height, weight, distance, or speed. <u>Cauthron</u> and ER 702 may prohibit an expert from introducing a measurement of "5" or "143" without explaining how that measurement was obtained, or how that value is quantified. However, neither <u>Cauthron</u> nor ER 702 require all scientific measurements to include an expression of their variability.

Finally, ER 702 necessarily assumes that the trial court will exercise discretion on the facts of a particular case. In these

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cases, however, the district court issued a blanket ruling that *no* breath test measurement is helpful in *any* DUI case unless the measurement is accompanied by a confidence interval. This decision was not an application of discretion under ER 702; it was a judicially-created addition to the statutory foundational requirements of RCW 46.61.506(4). The district court's bright-line rule also relieved the defense of its burden under ER 702 to show how confidence intervals (or their absence) render an otherwise valid breath test result irrelevant or unreliable, on the facts of a particular case.

"Because judges do not have the expertise required to decide whether a challenged scientific theory is correct, [the courts] defer this judgment to scientists." <u>Cauthron</u>, 120 Wn.2d at 887. Accordingly, under <u>Frye</u> the court does not assume the role of the scientific community by debating the merits of a particular scientific theory. The court does not consider whether other generally accepted theories produce better results, nor does it decide which generally accepted theory should be adopted. Because <u>Frye</u> does not allow a court to engage in a factual policy debate about the merits of a particular scientific theory or to require the relevant

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scientific community to adopt procedures that the court prefers, it was error for the district court to enter that debate under ER 702.

#### b. Breath Test Results Without Confidence Intervals Are Generally Accepted By Forensic Scientists.

When determining the reliability and accuracy of scientific evidence under ER 702, the definition of the "relevant scientific community" matters. It is noteworthy that all of Washington's ER 702 precedent, from <u>Cauthron</u>, 120 Wn.2d at 887, to <u>Copeland</u>, 130 Wn.2d at 255, to <u>Anderson v. Akzo Nobel Coatings, Inc.</u>, 172 Wn.2d 593, 597, 260 P.3d 857, 859 (2011), refers to general acceptance within the "*relevant* scientific community." These decisions recognize that scientists in the field of meteorology cannot be expected to validate a generally accepted methodology for DNA analysis, any more than chemists can be expected to validate a methodology for predicting annual rainfall.

Although the concept of measurement variability is generally accepted in the broad field of "science," the scientific community, as a whole, has not developed a generally accepted methodology for expressing the variability of biological test results. CP 212-13, 472, 682. Even if the scientific community accepts the theory of

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measurement variability as an abstract concept, it does not follow that there is a generally accepted method of *applying* those theories to a particular scientific field. Whatever methods may exist for calculating and applying measurement variability in other scientific contexts—and there are widely divergent practices within that broad community—those applications do not necessarily translate to the field of forensic science and biological testing.

Mr. Gullberg, who has been described as "the only known authority" for calculating measurement variability for breath test results, acknowledged that such calculations were "unusual in the forensic breath alcohol testing and forensic toxicology community." CP 473, 521. In fact, in the scientific community as a whole, there are "only two major breath alcohol uncertainty calculation papers in the scientific literature right now"—both of which were authored by Mr. Gullberg. CP 212, 387, 521. Because Mr. Gullberg is at the forefront of this research, his methodology for calculating confidence intervals has not been externally validated. CP 391, 460-61, 512-13.

Beyond breath test programs, forensic science, medical, and clinical laboratories throughout the country generally *do not* report uncertainty measurements with test results. CP 243-44

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(uncommon in the laboratory medicine, clinical chemistry and forensic science communities); CP 253 (uncommon in federal drug test programs); CP 386 (uncommon in crime labs); CP 517, 682 (uncommon in the biological testing community); CP 682-84 (uncommon in the medical, pharmaceutical and forensic laboratory communities). Dr. Emery, the defense expert, asserted that there are a number of scientific fields that "should be" using uncertainty to report measurement values, but, in practice, *are not*. CP 683-84.

"The ultimate concern of the judiciary is that the methods approved result in an accurate test, competently administered, so that a defendant is assured that the test results do in fact reflect a reliable and accurate measure of his or her breath content." <u>Ford</u>, 110 Wn.2d at 833. For over 50 years, Washington courts have held that the foundational requirements codified by RCW 46.61.506(4) meet the State's burden of establishing a "reliable and accurate measure" of a person's breath alcohol concentration. <u>Id.</u>; <u>Straka</u>, 116 Wn.2d at 870 (holding that "adherence to the protocols for evaluation and certification and the protocol for preparing and testing the simulator solution, when coupled with compliance with applicable WACs, produces scientifically reliable results"); <u>State v.</u> Baker, 56 Wn.2d 846, 852, 355 P.2d 806 (1960) (describing the

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foundational requirements for admissibility of a breath test result). In fact, in this case the defense stipulated that WSTLD's breath test program produces "an accurate and reliable result." CP 484, 486. The district court erred by ruling that an accurate, reliable and relevant breath test measurement is unhelpful to the trier of fact.

The district court acknowledged that the defense advocated a "higher standard" beyond the accuracy and reliability that is required by case law. CP 485 ("[T]he Courts thus far have said that ... if you have a system, an instrument and system that produces accurate and reliable results, that's all you need"). CP 485. Where a scientific procedure has been held to be accurate and reliable, there is simply no authority for imposing a "higher standard" under ER 702. Washington law requires a scientific measurement to be accurate and reliable; it does not require the proponent of that evidence to eliminate or account for all variability associated with that measurement.

All measurements carry a margin of error. CP 21. No Washington appellate court has ever held that the existence of variability in a measurement makes the reported value of the measurement invalid, unreliable, or irrelevant. However, under the district court's line of reasoning, *every* scientific measurement—

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height, distance, speed, weight—is *unhelpful* to the trier of fact and *inadmissible* without an expression of measurement variability. This is not the law.

When a party introduces a measurement, Washington law requires a party to show that the measuring instrument "was functioning properly and produced accurate results at the time it was employed." State v. Bashaw, 169 Wn.2d 133, 141-42, 234 P.3d 195, 200 (2010), overruled on other grounds by State v. Nunez, 174 Wn.2d 707, P.3d (2012). This requirement is always met in DUI cases because the jury receives extensive information about the way a defendant's breath test measurement was obtained. CP 591. A breath test result is never presented to a jury by itself, as the product of an omniscient or incomprehensible "black box." Instead, RCW 46.61.506(4) requires the State to present detailed evidence about the breath test process and the quality assurance procedures that ensure the test result is accurate and reliable. To convey the required information, the State must call two expert witnesses, a BAC technician and a WSTLD toxicologist. These experts testify about the training and certification of the people who operated and calibrated the instrument, how the instrument calculates a breath alcohol

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measurement, the quality assurance protocols that are in place, and the instrument's numerous error detection methods. CP 228, 236-37, 488-89.

Quality assurance procedures not only assure that a breath alcohol test result is accurate and reliable, they also influence the confidence interval calculation itself. CP 228, 236-37, 395. The confidence interval encompasses the following: a technician's training, qualifications, and experience; environmental conditions; test and calibration methods; and traceability. CP 227-28. In other words, the confidence interval is a "summary . . . of the outcome of a good quality assurance program." CP 229, 239-40. When a breath test result is accompanied by testimony about these quality assurance procedures, as it is in every DUI case, the jury can use this information to assess the accuracy and reliability of the breath test result. CP 228.

WSTLD's extensive quality assurance procedures are generally accepted within the scientific community. CP 472. For this reason, Mr. Gullberg—the foremost authority on breath test uncertainty calculations—testified that breath test results were accurate, precise and reliable *without* confidence intervals. CP 479-80 ("When all the criteria are met that are designed in the

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measurement process, the blank tests, duplicates, the degree, external standard, internal standard, 15 minutes, qualified operator approved instrument, when all that's met, yes then it's my opinion that [the reported breath test values] are accurate and precise measurements of that person's breath alcohol concentration"). CP 480. A reported measurement that has met high quality assurance standards is just as scientifically valid as a measurement that also expresses measurement variability. CP 236, 257, 395-96, 490.

A breath test result without a confidence interval is accepted as accurate, reliable, and scientifically valid within the fields of forensic science, laboratory medicine, clinical chemistry and biological testing generally. CP 257-58, 324-25, 394, 479. Furthermore, a test result obtained in conformance with all WSTLD and statutory quality assurance procedures is not only an accurate and reliable measurement of a person's breath alcohol content, it is the *best* estimate of the measurement's true value. CP 236, 238, 268, 330, 335, 397, 473, 479-80. The trial court erred by rejecting the opinion of the relevant scientific community.

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#### 4. THE DISTRICT COURT USURPED THE ROLE OF THE LEGISLATURE, THE WASHINGTON STATE TOXICOLOGIST, AND THE SCIENTIFIC COMMUNITY.

By requiring WSTLD to introduce confidence interval calculations with all breath test results, the district court hoped WSTLD would "serve as a catalyst to move breath-alcohol testing on a national level toward more rigorous science." CP 39. In so holding, the district court assumed the role of the legislature by amending RCW 46.61.506(4). The district court also assumed the role of the Washington State Toxicologist by selecting and approving methods for the administration of the breath test program, and assumed the role of the scientific community by deciding which scientific practices and procedures WSTLD should adopt. The superior court correctly held that the district court exceeded its authority.

a. The Legislature Determines The Foundational Requirements For The Admissibility Of A Breath Test.

In most cases, the admissibility of scientific evidence is governed primarily by common law and the rules of evidence. The rules of evidence may be promulgated by both the courts and the legislature. Jensen, 158 Wn.2d 384, 394, 143 P.3d 776, 781 (2006); <u>State v. Slider</u>, 38 Wn. App. 689, 695-96, 688 P.2d 538 (1984). Regarding evidence in DUI cases, the legislature has codified eight specific foundational requirements for the admissibility of breath test results. RCW 46.61.506(4)(a). RCW 46.61.506(3) further requires that a breath test "shall have been performed according to methods approved by the state toxicologist." Once these threshold requirements are met, all other challenges to the reliability or accuracy of the test "*shall not preclude the admissibility of the test*," but instead "may be considered by the trier of fact in determining what weight to give to the test result." RCW 46.61.506(4)(c).

The foundational requirements for breath tests were established by legislative amendment in 2004. These amendments were based on the legislative finding "that previous attempts to curtail the incidence of driving while intoxicated have been inadequate" and that new legislation was necessary "to convey the seriousness with which the legislature views this problem" and "to ensure swift and certain consequences for those who drink and drive." Laws of 2004, ch. 68, § 1. To meet these goals, the legislature codified existing common-law foundational

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requirements, while specifying that all other challenges to breath test procedures "will no longer go to the admissibility of test results." <u>Id.</u>

In <u>Jensen</u>, the Washington Supreme Court expressly upheld the constitutionality of the 2004 amendments. 158 Wn.2d at 388. The court observed that the 2004 amendments intended to codify "the foundational requirements for breath tests that had been established through a long line of case law." <u>Id.</u> at 396-97.

The concept of uncertainty predates the legislature's 2004 amendments. CP 30, 33. The International Organization for Standardization ("ISO") published its Guide to the Expression of Uncertainty in Measurement in 1995. CP 208-09. According to Dr. Emery, the expression of uncertainty with *all* scientific measurements has been a scientific concept "[s]ince the days when they were trying to prove that the earth revolves around the sun." CP 687. At a minimum, Dr. Emery suggested that the concept of expressing measurement variability with test results predates the Washington Supreme Court's opinions in <u>Baker</u> and <u>Ford</u>. CP 689. Yet, neither the legislature nor Washington appellate courts have ever required the State to provide an uncertainty calculation as a

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foundational prerequisite to the admissibility of an otherwise valid breath test result.

The legislature has the authority both to define the crime of DUI and to codify the foundational requirements governing the admissibility of a breath test. <u>State v. Crediford</u>, 130 Wn.2d 747, 753, 927 P.2d 1129 (1996); <u>Jensen</u>, 158 Wn.2d at 393-400. If the legislature intended all breath test measurements to be expressed with a statement of uncertainty, it would have imposed that requirement. Instead, the legislature has explicitly stated that, once the enumerated foundational requirements are satisfied, all other challenges to the "accuracy" of the test "shall not preclude the admissibility of the test." RCW 46.61.506(4)(c).

The State agrees that nothing in RCW 46.61.506 prevents the trial court from exercising its discretion to exclude a test result under the rules of evidence, on a valid basis. <u>Jensen</u>, 158 Wn.2d at 398-99. But, here, the district court did not properly apply the rules of evidence. When the court excludes evidence under ER 702 or ER 403, it exercises discretion based "*on the facts of a particular case*." <u>Id.</u> (emphasis added); <u>see also State v. Willis</u>, 151 Wn.2d 255, 262, 87 P.3d 1164 (2004) ("The admissibility of expert testimony is governed by ER 702 and requires a case by case

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inquiry."); <u>Greene</u>, 139 Wn.2d at 73 (Even if generally accepted in principle, proffered scientific evidence is inadmissible under ER 702 unless it is helpful to the trier of fact *under the particular facts of the specific case in which the evidence is sought to be admitted.*") (emphasis added). In these cases, the district court did not exercise discretion; it imposed a foundational requirement. A foundational requirement adopted in every case, regardless of the particular facts of the case, is not an exercise of discretion. It is an improper judicially-created amendment to RCW 46.61.506(4).

#### b. The Washington State Toxicologist Determines Whether A New Scientific Methodology Should Be Adopted.

The field of forensic breath testing is also unique because the Washington legislature has delegated supervision of that field to the Washington State Toxicologist. In fact, the Washington State Toxicologist is the only person authorized to approve methods for breath testing in Washington. RCW 46.64.506(3). The current Washington State Toxicologist, Dr. Couper, has determined that breath test results are accepted in the relevant scientific community without confidence intervals. CP 394-95. By requiring the WSTLD to adopt a particular scientific procedure, the district court usurped the role that the legislature has delegated exclusively to the state toxicologist.

If a breath test methodology is generally accepted in the scientific community, the decision to adopt new methodologies rests solely with the state toxicologist. In Ford, the Washington Supreme Court recognized that the judiciary's role is not "to substitute our judgment for that of the state toxicologist." Id. Instead, the court's role is simply to ensure that the toxicologist's decisions are not "arbitrary and capricious." Ford, 110 Wn.2d at 829. A decision is "not arbitrary or capricious when exercised honestly and upon due consideration, where there is room for two opinions, however much it may be believed that an erroneous conclusion was reached." Id. at 830. Accordingly, an argument "[t]hat the toxicologist might have used a methodology more precise or might have used a different procedure of evaluation reflects upon his administrative judgment, but does not make his action arbitrary and capricious." Id. at 832.

The state toxicologist has made confidence interval calculations publicly available, but has not required confidence intervals to be expressed with all breath test results. This is a rational decision, considering: (1) no other breath test program in

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the United States expresses confidence intervals with its breath test results; (2) that there is no generally accepted method for expressing measurement variability in forensic, clinical, or laboratory testing; and (3) that breath test results are generally accepted without confidence intervals. The fact that the district court would have made a different administrative decision does not make the state toxicologist's decision arbitrary or capricious. The district court erred by ignoring the <u>Ford</u> standard and instead requiring the state toxicologist to adopt new scientific practices and procedures.

#### c. Scientists Decide Whether A Methodology Is Generally Accepted In The Scientific Community.

When analyzing the admissibility of scientific evidence under ER 702, the court must look at *current* practices accepted in the scientific community, rather than engage in policy discussions about how those practices should change. As the Washington Supreme Court has explained:

*Frye* envisioned an evolutionary process with novel scientific techniques passing through an "experimental" stage during which they would be scrutinized by the scientific community until they arrive at a "demonstrable" stage. However, science never stops evolving and the process is unending. Each scientific inquiry becomes more detailed and nuanced. As one commentator has noted, there is a "difference between the quest for truth in the courtroom and in the laboratory. Law must resolve disputes finally and quickly, whereas science may consider a multitude of hypotheses indefinitely."

Anderson, 172 Wn.2d at 607 (citations omitted).

Scientists should *always* debate new methodologies and new theories. But it is not the court's role to join in that debate. The court's role is to decide whether scientists have generally accepted a particular scientific practice. While the scientific community continues to debate the role of measurement variability in forensic science, ER 702 does not allow the court to advocate for or mandate a particular scientific practice.

Instead of requiring the State to comply with generally accepted standards of accuracy and reliability, the district court requires the State to *exceed* current scientific standards. The district court mandated a foundational requirement that has not been modeled, validated, adopted, or required by any accrediting organization or breath test program in the United States.

Additionally, the district court's decision does not enforce existing standards of accuracy and reliability within the relevant scientific community. Instead, the district court expressed concern

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that "[f]orensic scientists, for the most part, are lagging behind the uncertainty curve." CP 33. The court hoped that WSTLD's confidence interval calculations would "serve as a catalyst to move breath-alcohol testing on a national level toward more rigorous science." CP 39. Neither ER 702 nor any other authority gives a court the authority to catalyze the generally accepted practices of the scientific community.

ER 702 "provides significant protection against unreliable, untested, or junk science." <u>Anderson</u>, 172 Wn.2d at 606. It is a rule designed to ensure that all scientific evidence presented to a trier of fact is considered reliable within the relevant scientific community. It is not intended to be a vehicle by which the court moves the relevant scientific community forward or encourages the scientific community to change its current practices. By statute, that authority rests with a scientist—the state toxicologist. RCW 46.61.506(3). If the forensic science community is lagging behind the rest of the scientific community, then the scientific community is the appropriate body to move forensic science forward. <u>See</u> CP 244-46, 251, 494-95, 626-27, 691-92 (explaining that scientific accrediting organizations are gradually phasing measurement variability requirements into medical, clinical, and forensic

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laboratories). The district court erred by attempting to transform the generally accepted practices of the relevant scientific community.

#### D. CONCLUSION

A court's role is to evaluate whether existing scientific methodologies and practices are generally accepted within the relevant scientific community. ER 702 does not allow courts to make policy decisions about what scientific methodologies ought to be adopted, or how scientific practices ought to change. That role is left to members of the relevant scientific community. By requiring WSTLD to adopt specific scientific practices, and by making those practices a foundational requirement to the admissibility of a breath test, the district court exceeded its authority under ER 702. On review, the superior court agreed. For the foregoing reasons, the State respectfully asks this Court to affirm the superior court.

DATED this 18 day of September, 2012.

Respectfully submitted,

DANIEL T. SATTERBERG King County Prosecuting Attorney

Bv:

JESSICA MURPHY MANCA, WSBA #42337 Deputy Prosecuting Attorney Attorneys for Respondent Office WSBA #91002

# Certificate of Service by Mail

Today I deposited in the mail of the United States of America, postage prepaid, a properly stamped and addressed envelope directed to Ryan Robertson, attorney for the appellant, at Robertson Law PLLC, 701 Fifth Avenue Suite 4735, Seattle, Washington 98104, containing a copy of the Brief of Respondent, in KING COUNTY DISTRICT COURT ET AL. V. STATE OF WASHINGTON, Cause No. 67456-1-I, in the Court of Appeals, Division I, for the State of Washington.

I certify under penalty of perjury of the laws of the State of Washington that the foregoing is true and correct.

Name Jessica I Done in Seattle, Washington

9/18/12 Date 9/18/2012



#### Certificate of Service by Mail

Today I deposited in the mail of the United States of America, postage prepaid, a properly stamped and addressed envelope directed to Ted Vosk, attorney for the appellant, at Cowan, Kirk & Gaston, 4040 Lake Washington Blvd. #300, Kirkland, WA 98030, containing a copy of the Brief of Respondent, in <u>KING COUNTY DISTRICT COURT ET AL. V. STATE OF</u> <u>WASHINGTON</u>, Cause No. 67456-1-I, in the Court of Appeals, Division I, for the State of Washington.

I certify under penalty of perjury of the laws of the State of Washington that the foregoing is true and correct.

Name) Jessica Manca Done in Seattle, Washington

Date 9/18/2012

