IN THE DISTRICT COURT OF KING COUNTY FOR THE STATE OF WASHINGTON

STATE OF WASHINGTON, Plaintiff, vs. FAUSTO, LESLIE PERPUSE, and BALLOW, BRETT RICHARD, Defendants.	)	Case No. C076949 and 9Y6231062 ORDER SUPPRESSING DEFENDANT'S BREATH-ALCOHOL MEASUREMENTS IN THE ABSENCE OF A MEASUREMENT FOR UNCERTAINTY

In the two Driving Under the Influence (DUI) cases herein, Defendants request suppression of their breath test results under E702, ER 403 and ER 901. Defendants argue that, because the Washington State Toxicology Laboratory Division[1] (WTLD) is reasonably able to produce a breath test reading with a corresponding measure of the reliability of the reading, their breath test readings should not be admitted without such a corresponding measurement. The State counters that issues of reliability are not foundational by statute, WTLD protocols or current forensic practices, and are not required by the rules of evidence. Testimony was taken August 2nd through August 6th, 2010. The State was represented by Ms. Margaret E. Nave and Mr. Moses Garcia. The defendants were represented by Mr. Ted Vosk, Ms. Andrea Roberts and Mr. Kevin Trombold.

For the reasons stated below, we hold that historic standards of justice - contained in the federal constitution, case authority and court rules - require that the State present breath test readings, both in pretrial discovery and at trial, showing their true value, rather than wrapped in such a way that a false picture is presented, either to the defendant or to the trier of fact.

[1] The WTLD was known as the Washington State Toxicology Laboratory at the time of the Ahmach decision. As a part of the office's reorganization, it is now known as the Washington State Toxicology Laboratory Division. To avoid confusion, this decision will refer to the lab, both historically and in the present, as the WTLD.

Findings of Fact

I. Definitions and Explanations

Because the subject matter of this opinion is so heavily steeped in scientific principals and procedures which are largely unknown to the Judiciary and the Bar, the Court is including in the Findings explanations and definitions of many of the principals involved.

A. Contributors to Uncertainty – no measurement is consistently accurate.

1. *Instrument bias*, otherwise known as systemic error, is the tendency of an instrument to consistently incorrectly report the true value of a measured item, the measurand. It is associated with the lack of accuracy of a measurement.
2. *Biological/Sampling*, is the single greatest contributor to uncertainty. The variables contributing to biological/sampling error include: breathing patterns; breath temperature; breath volume and breath flow rate.
3. *Traceability*, concerns the relating of a measurement result to stated references through an unbroken chain of comparisons, all with stated uncertainties.
4. *BAC Simulator*, the device associated with a breath test instrument, is used as a calibration device. Each simulator device and solution may introduce error through traceability, and through their temperature regulating systems, thermometers and attached tubing.
5. *Instrument/Analytical*, is the error associated directly with the BAC Datamaster, but also includes operator (trooper, officer or deputy) error. Instrument error includes errors related to optics (infrared spectrometry), electronics, software, tubing, and temperature.

B. Instrument Bias

1. All measuring instruments have bias associated with them.
2. Therefore, all values reported by an instrument are artificially elevated or depressed by instrument bias.

3. Methods of determining instrument bias are commonly used and accepted in the scientific community.
4. Generally accepted scientific protocols usually require calibration of instruments. This process compares the reference standard (a known) with the instrument measurement results, thus revealing the machine bias.
5. After the determination of instrument bias, corrections can be made using algebraic formulas.
6. If measurement results are not corrected for instrument bias, instrument bias results in greater error in any given measurement.
7. It is generally accepted in the scientific community that all reported instrument results will be corrected for bias. Yet, this practice is not generally followed in the forensic science community.

C. Measurement uncertainly – confidence intervals

1. Every measurement is "uncertain," in that no instrument is infinitely precise and accurate. No matter how good the instrument or the methodology, one can never know for sure the actual value of the thing being measured.
2. Bias is part of that uncertainty, as is the lack of precision of the instrument.
3. For any instrument there are an infinite number of values dispersed within a range around the value obtained by the instrument that are consistent with measured value, and that with varying degrees of credibility can be attributed to the true value of the thing being measured.
4. Even the best instruments yield only an estimate of the true value.
5. An uncertainty measurement is a qualitative statement characterizing the dispersion (range) of values that can be actually and reasonable attributed to the measurement.
6. This range of values associated with a measurement and the level of confidence associated with that range are known as measurement uncertainty. There are many methods calculating and showing uncertainty. One such method, now adopted by the WTLD is a confidence interval.

7. Because every measurement result actually represents a range of values, a measurement is more accurate if it is accompanied by a quantitative estimate of its uncertainty.

8. All important sources of uncertainty must be taken into account in an effort to increase the level of confidence to the highest level. Measurement uncertainty does not include mistakes, and assumes no errors.

D. Fitness for Purpose

An instrument is considered “fit for purpose,” or a method is “fit for purpose,” if it is appropriate for use in testing the specimen.

E. Quality Assurance

Quality assurance involves the practices and procedures used on an instrument to determine if it is operating in a proper manner. Quality assurance includes operating instructions, calibration and maintenance.

F. Quality Assurance Procedure

A procedure which checks the critical components within each breath test instrument on at least a yearly basis.

G. Measurement Uncertainty

Measurement uncertainty focuses on the test results. Measurement uncertainty assumes the fitness for purpose of the measuring device. Measurement uncertainty also assumes appropriate quality assurance practices for the processes. Measurement uncertainty defines how accurate the measurement actually is and aids in its interpretation.

II. Measurement Standards Adopted Within the Scientific and Forensic Communities

A. The International Organization for Standardization

There are several organizations that establish standards for laboratory work. The leading organization is The International Organization for Standardization (ISO). They do not accredit or inspect laboratories, merely set standards for the work. National organizations do the inspections necessary for certification or accreditation.

B. ISO 17025

ISO has created ISO 17025 – General Requirements for the Competence of Testing and Calibration Laboratories. This has been accepted by the Washington Toxicology Laboratory as the standard for their accreditation and work.

C. ASCLD/LAB

The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) uses ISO 17025 as the standard when doing accreditation reviews. The Washington Toxicology Laboratory Division (WTLD) received accreditation from ASCLD/LAB November 16, 2009 for its calibration program. No accreditation has been sought, nor is it available for the breath testing program.

D. NIST; EURACHEM; A2LA and NATA

There are other national and international organizations which establish standards for laboratories. Examples are National Institute for Standards and Testing (NIST), EURACHEM, American Association of Laboratory Analysts (A2LA), and National Association of Toxicology Analyst (NATA).

E. Standards

Each of the organizations mentioned above have established or adopted standards which require the assessment and reporting of uncertainty of measurement with a test result.

F. Uncertainty

It is well accepted in the scientific community that testing laboratories will use procedures for estimating uncertainty of measurement whenever possible.

G. Uncertainty and Test Reports

It is well accepted within the scientific community that a statement on the estimated uncertainty of measurement is needed for a test reports when it is relevant to the validity or application of the test result, or when the uncertainty affects compliance to a specific standard. A decision not to calculate uncertainty is not appropriate under generally accepted scientific principles.

H. Uncertainty is Essential to Proper Test Result Interpretation

Knowledge of the uncertainty associated with measurement results is essential to the proper interpretation of the results. Without quantitative assessment of uncertainty it is impossible to determine if statutory minimum limits have been exceeded. It is generally accepted within the scientific community that:

1. All results from every forensic test made should indicate the uncertainty in the measurements that are made.
2. Forensic reports, and any courtroom testimony stemming from them, must include the limitations of the analysis, including probabilities where possible.
3. Calculations of uncertainty can be done in many ways, including spreadsheet, tables or charts, calculators and manually. Calculations of uncertainty require an ability to calculate algebraic algorithms, but not advanced math skill.

I. WTLD Controls the Method of Determining Uncertainty

There are many methods of estimating the uncertainty which are recognized within the scientific community. WTLD uses a confidence interval system developed by Rod Gullberg. The particular method chosen to determine uncertainty lies entirely within the purview of the WTLD and any appropriate accrediting organization.

III. Bias or Systemic Error as Applied to the BAC Datamaster

A. Systemic Error

The field of forensic breath testing recognizes that there is some bias associated with every breath test instrument, and every breath test.

1. Bias does not automatically disqualify a machine or breath test. Rather, bias or systemic error must be determined and the results corrected for the bias.
2. Due to systemic error, the value reported by a Datamaster test is artificially high (or low) as compared with the true value of the breath test.
3. The failure to correct for bias leads to the reporting of a value known to be in error.

4. To correct the error, the bias value must be added to (or subtracted from) the indicated result.
5. The bias of a BAC Datamaster is determined at the time of the QAP. The results are not corrected for this unless a specific request is made by a defense attorney or defendant. This bias calculation is reported as a percentage on the QAP worksheet.
6. For a particular value, *Y*, indicated by a Datamaster, the bias corrected BAC is determined by the following algorithm:

$$\text{BAC}=\sqrt{\frac{\boldsymbol{Y}}{(\mathbf{1}+(\boldsymbol{bx}\mathbf{0.01})}}$$

7. The Datamaster can be programmed to calculate the bias adjustment automatically and print out the corrected values. Those Datamasters used in Washington do not now do so.

B. Datamaster test protocol

The Datamaster test protocol requires an individual to provide two different test samples. Each is tested for alcohol content by the instrument, and a separate reading is produced for each.

1. Unless the two readings are identical, the mean (average) of the readings is more likely correct that either reading alone.
2. A bias corrected reading is always more accurate than an uncorrected reading.
3. The best estimate of an individual's true BAC reading is the bias corrected mean of the values reported by the Datamaster.
4. The bias corrected mean may, when compared to the actual readings, produce a substantially different result.
5. The bias corrected mean may produce results below the legal thresholds (.02, .04, .08, .15) even when the actual test readings are both above the minimum level. In this situation there is a greater than 50% chance that the actual BAC reading is below the legal threshold.

6. The QAP protocols allow the use of a Datamaster with positive or negative bias up to and including 5% in each direction.
7. Without correcting for bias, all values reported by the Datamaster are artificially skewed by an amount up to 5%.
8. The bias values obtained during the QAP are reported on the web, so that if an individual knew where to look, and how to do the calculations, the actual reading could be obtained.
9. The failure to correct for bias may result in erroneous conclusions regarding whether a particular reading is above or below a legal limit.

IV. Uncertainty as applied the BAC Datamaster

A. Every measurement made by every instrument has an error associated with it.

B. Given the inherent variability of measurement, a statement of a measurement result is incomplete without a statement of the accompanying estimate of uncertainty, (i.e., the range of values within which the value of the measurand can be said to lie within a specified level of confidence).

C. It is generally accepted in the scientific community that forensic reports, and testimony from them, must include a clear descriptor of the limitation of the analysis.

D. There is no known state laboratory that routinely publishes this information for breath tests at this time. There are very few accredited forensic laboratories. It is expected that those state laboratories wishing to gain or retain accreditation will have to include a clear descriptor of the limitation of any analysis in the future. This will include the WTLD.

E. All BAC measurements represent a range of values, any of which could represent the true value with a given level of confidence. Thus, no reliable result can be reported without an estimate of uncertainty.

F. It is impossible to determine the likelihood that the result of a breath test - which is close to a legal limit - actually exceeds the legal limit without determining the uncertainty of the test.

G. The uncertainty associated with BAC testing will vary from one machine to another and from one QAP to another.

H. The confidence interval of a Datamaster result can be calculated using algebra and a statistical table. This is likely beyond the capabilities of most defendants, jurors, attorneys and judges.

1. The web site for the WSP Breath test section sets forth the methodology for determining uncertainty with the Datamaster.
2. Upon request the WTLD will calculate the bias and uncertainty associated with a particular test. Absent a request, the WTLD makes no report or mention of bias or uncertainty.

I. Absent the reporting of uncertainty, there is a substantial possibility that even an expert would not make a meaningful analysis of a particular breath reading.

1. Testimony revealed that many BAC readings in excess of .08, when considered in light of the confidence interval, are likely to have actual readings less than .08.
2. The top three officials of the WTLD were unable to accurately determine a true BAC without an uncertainty calculation.

J. The WTLD uses a common spreadsheet program to correct for bias and calculate uncertainty. Most of the information necessary is available from the QAP process and available on the web. The mean of the breath tests can be determined from information in the Datamaster. At the time of the QAP the uncertainty range for all possible BAC readings could be calculated for each Datamaster.

V. Policies and Procedures of WTLD

A. The policies and procedures to be used by the WTLD for calibration, QAP, and operation of the instrument are determined by the Washington State Toxicologist, Dr. Fiona Couper, pursuant to the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC).

B. The protocols for the QAP have been applied and tested over many years. They require rigorous science, and their use reduces the inherent uncertainty of the test readings. Appropriate application of all protocols, however, will not eliminate instrument bias or measurement uncertainty.

C. The WTLD, like most medical and pathology laboratories, does not calculate uncertainty unless requested. However, testing for BAC has critical minimum standards which establish per se violations. This separates this subject from most diagnostic biological testing.

D. ISO and other standard setting organizations have required that uncertainty be included in measurement reports, but have delayed implementation of this requirement due to the inability of many to comply.

E. The WTLD can comply, and does provide this information upon specific request.

F. From October 2009 to August 2010 the WTLD has performed approximately 650 such calculations. Yet, in the same time frame there have been approximately 25,000 to 30,000 BAC tests performed.

G. The WTLD is believed to be the only breath test program in the United States to measure uncertainty.

H. The WTLD is not required to meet ISO standards or be accredited. It does so voluntarily and as an indicator of the high standards this laboratory strives to attain.

Background

In the previous ruling of this Court, State v. Sanafim Ahmach, et al., C00627921,[2] (Ahmach), we suppressed the breath test results of Sanafim Ahmach and other similarly situated defendants. The bases for suppression were broad, but were all related directly to the inability, at the time, of the WTLD to produce a reliable work product. As stated in the Order Lifting BAC

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[2] Pursuant to King County District Court (KCDC) local rule, LCrRLJ 8.2 (2), the Ahmach motion was declared a motion of countywide significance and heard by a three judge panel consisting of judges from different divisions of the KCDC. Those same three judges, Mark Chow, Darrell Phillipson and David Steiner, sat as a panel and heard evidence in these new cases.

Suppression under State v. Ahmach,[3] the WTLD has been reorganized and has received a high level of accreditation which reflects, among other things, very high quality assurance standards and rigorous scientific procedures. This court's previous ruling, however, pointed to one area which has received only partial effort from the WTLD, i.e., breath test machine bias. "Bias" is the tendency of a machine or device to measure consistently high or low.[4] Findings 48 through 51 of the Ahmach decision outlined the problem presented by machine bias.[5] "Bias" is but one of the reasons that all measurements are "uncertain.[6]"

Rod Gullberg, Research Analyst for the Washington State Patrol (and a driving force for quality control in the Washington State breath test program), defines "uncertainty' as "the degree to which a measurement result fails to exactly reproduce the quantitative and qualitative features of the property being measured (the measurand). All measurements possess uncertainty due to limitations in technology and methodology. Inaccuracy and imprecision are examples of uncertainty. No measurement is perfect. The important thing is that the uncertainty be known and minimized so the process is fit-for-purpose." Methodology and Quality Assurance in Forensic Breath Alcohol Analysis, R. G. Gullberg, Forensic Science Review, V. 12, Page 67 (2000).

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[3] The State requested that this Court enter two post-Ahmach orders; one clearly stating (if we were to decide) that the problems outlined in Ahmach had been corrected, and one ruling on the issue of uncertainty. While "instrument bias" was cited as a problem in Ahmach, instrument bias was tangential enough to Ahmach that this Court was able to accommodate – without defense objection – the State's request for two orders.

[4] "Bias" is also known as "systematic error."

[5] The findings related to machine bias were as follows:

> 48. All measuring machines have some bias, and Datamaster breath test machines have bias which is identified in the QAP process.
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> 49. This bias is not determinable without testing; sometimes creating readings lower than actual and sometimes higher.
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> 50. The bias of any particular machine can be determined from the information created during the QAP process by applying mathematical formulas and calculations. This information is not readily available to the public, though it is published on the web. Due to the complexity of the calculations and formula involved, few in the legal community are aware of this bias. The Breath Test Section of the Washington State Patrol does, however, provide this information to attorneys and defendants when requested.
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> 51. The machine bias information could be easily made available to the defendants, attorneys and public by the State Toxicologist.

[6] "Uncertainty" as a concept is most closely related in the mind of the lay public to the concept of "margin of error." The term "margin of error," however, is a term most commonly used to express the margin of sampling error in a survey's results. The term "margin of error" is not used in the science of metrology, a science defined below.

As stated above, “bias” is only one of the components of uncertainty in a breath test measurement. Other contributors to measurement uncertainty include error created in collecting the biological sample and error created in the processes necessary to measure any substance, including instrument error and traceability error.[7]

Measurement uncertainty is a concept that is elemental in the science of “metrology.” Metrology is defined by the International Bureau of Weights and Measures as "the science of measurement, embracing both experimental and theoretical determinations at any level of uncertainty in any field of science and technology."[8] Thus, breath-alcohol measurement is a metrological science which necessarily encompasses all aspects of the metrological field.

Like any scientific endeavor, metrology is not static, but is constantly in the process of refinement as new standards are proposed, reviewed and adopted. According to the International Organization for Standardization (ISO), “several factors combine to render a standard out of date: technological evolution, new methods and materials, new quality and safety requirements.” About ISO; How are ISO standards developed? Exhibit 80. Thus, the measurement of uncertainty and its disclosure with any scientific measurement must be viewed as a step forward in the science of metrology.[9] Rather than indicating poor scientific procedures, a measurement for uncertainty presumes that all processes and procedures have been stringently followed.[10]

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[7] Estimating the measurement uncertainty in forensic breath-alcohol analysis, Rod G. Gullberg, Accreditation and Quality Assurance: Journal for Quality, Comparability and Reliability in Chemical Measurement, Volume 11, Number 11, 562-568, 563 (2006), (see also in this Order, Findings of Fact, section (I.) (A.)).

[8] Fundamentals of Dimensional Metrology, Ted Busch, Wilkie Bros Foundation, Delmar Publishers.

[9] As previously stated, Rod Gullberg has been advocating for the measurement of uncertainty for years. Clearly, the forensic community as a whole has not been receptive. In a 2005 article Gullberg stated that “Unfortunately, few jurisdictions are able to clearly document measurement uncertainty and traceability. Moreover, established case law in many jurisdictions supports minimal analytical quality control and documentation which, unfortunately, provides little incentive to improve performance.” Estimating the measurement uncertainty in forensic breath-alcohol analysis, Rod G. Gullberg, 563, Id.

[10] As stated in JCGM, Evaluation of measurement date – guide to the expression of uncertainty in measurement, (GUM), “It is now widely recognized that, when all of the known or suspected components of error have been evaluated and the appropriate corrections have been applied, there still remains uncertainty about the correctness of

Properly understood, measurement for uncertainty may provide confidence in a result, rather than doubt.

At the root level, all metrological organizations recognize the importance of uncertainty in reporting measurements:

- When reporting the result of a measurement of a physical quantity, it is obligatory that some quantitative indication of the quality of the result be given so that those who use it can assess its reliability. Without such an indication, measurement results cannot be compared, either among themselves or with reference values given in a specification or standard. It is therefore necessary that there be a readily implemented, easily understood, and generally accepted procedure for characterizing the quality of a result of a measurement, that is, for evaluating and expressing its uncertainty. JCGM, Evaluation of measurement date – guide to the expression of uncertainty in measurement, (GUM), Introduction, section 0.1, 2008.
- Given the inherent variability of measurement, a statement of a measurement result is incomplete (perhaps even meaningless) without an accompanying statement of the estimated uncertainty of measurement (a parameter characterizing the range of values within which the value of the measurand can be said to lie within a specified level of confidence). G104-A2LA Guide for Estimation of Measurement Uncertainty In Testing, Introduction, P. 4, July 2002, Exhibit 13.
- Uncertainty of measurement is the most important single parameter that describes the quality of measurements. This is because uncertainty fundamentally affects the decisions

the result, that is, a doubt about how well the result of the measurement represents the value of the quantity being measured." Introduction, Section 0.2, 2008.

that are based upon the measurement result. EURACHEM/CITAC Guide, Measurement uncertainty arising from sampling, Foreword, Page ii, First Edition, 2007, Exhibit 22.

- Knowledge of the uncertainty of measurement of testing results is fundamentally important for laboratories, their clients and all institutions using these results for comparative purposes. Competent laboratories know the performance of their testing methods and the uncertainty associated with the results. ILAC, Introducing the Concept of Uncertainty of Measurement in Testing in Association with the Application of the Standard ISO/IEC 17025, Preamble, P. 4, Exhibit 50.
- Every measurement made has error associated with it, and, without a quantitative statement of the error, a measurement lacks worth. Indeed, without such a statement it lacks creditability. National Association of Testing Authorities, Assessment of Uncertainties of Measurement for Calibration and Testing Laboratories, Introduction, P. 8, 2002, Exhibit 87.
- In general, the result of a measurement is only an approximation or estimate of the value of the specific quantity subject to measurement, that is, the measurand, and thus the result is complete only when accompanied by a quantitative statement of its uncertainty. NIST Technical Note 1297, 1994 Edition, Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results, Section 2.1, Exhibit 90.

Yet, not all professions which utilize the science of metrology account for and report uncertainty in their measurements. Forensic scientists, for the most part, are lagging behind the uncertainty curve. In a report prepared by the National Academy of Sciences in response to a Congressional request, the reporting committee stated that "few forensic science methods have developed adequate measures of the accuracy of inferences made by forensic scientists. All results for every forensic science method should indicate uncertainty in the measurements that are made….[11]

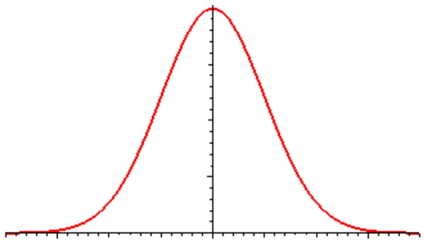
The WTLD now stands in stark contrast to the lab with the problems delineated in Ahmach. No longer complacent about its duties and the processes required for those duties, the WTLD is now moving into a leadership role in the field of forensic toxicology. Under the direction of the new Washington State Toxicologist, Dr. Fiona J. Couper, the WTLD is one of the few labs with a breath-alcohol calibration program that is accredited under the stringent standards of ISO 17025. Further, Dr. Couper has allowed Rod Gullberg, Breath Test Section Research Analyst, to move forward with his pioneering work in the determination and documentation of uncertainty in the area of breath-alcohol testing. In his career with the Washington State Patrol and now with the WTLD, Rod Gullberg has championed rigorous science and full disclosure. Knowledgeable, precise and forward thinking, Gullberg has pushed for the determination, documentation and disclosure of uncertainty in breath-alcohol testing. Of equal or greater importance, Gullberg has developed a sound method for the determination of uncertainty in breath-alcohol measurements.

There are several accepted methods for determining and documenting uncertainty. Gullberg has chosen a method known as a "confidence interval." A "confidence interval" as "an interval this is symmetric about some sample statistic (e.g., the sample mean)….The limits of the confidence interval are functions of the desired confidence, the variability, and the sample size.[12]

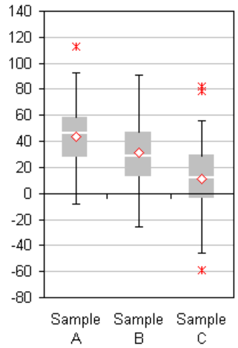
[11] National Research Council, Strengthening Forensic Science in the United States, A Path Forward, P. 184, 2009, Exhibit 83.

[12] Methodology and Quality Assurance in Forensic Breath Alcohol Analysis, R. G. Gullberg, Forensic Science Review, V. 12, Page 65 (2000).

A confidence interval may be shown graphically in many different ways. Two of the most common graphical representations are the bell curve:[13]



and the error bar:[14]



Of course, it is also possible to present a breath-alcohol confidence interval by stating the mean breath-alcohol reading along with the lower possible breath-alcohol reading and the higher possible breath-alcohol reading. The confidence interval is then made complete when a statement of a "level of confidence" is attached. For example, a confidence interval for an 0.085 mean breath-alcohol reading might appear as follows: .0733 - .0961, with a 99% level of confidence.[15]

Rod Gullberg has used, published and taught his confidence interval method for at least the last decade. His work has been recognized as far away as Sweden. Professor A.W. Jones, PhD, DSc, from the Department of Forensic Toxicology, University Hospital, Sweden, refers to

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[13] Representations of a confidence interval utilizing a bell curve will typically show the mean of two breath-alcohol measurements as the middle vertical bar; the lower horizontal line as the possible ranges of breath-alcohol (zero on the left and higher readings on the right) and the sides of the bell as the possible lower (left side) and higher (right side) mean breath-alcohol reading. The graph should also include a statement of the confidence interval, e.g., that there is 95% chance that the true mean breath-alcohol reading is within the area covered by the bell curve.

[14] Representations of a confidence interval utilizing an error bar or a "box and whiskers" graph (above) show the mean breath-alcohol reading as a dot or box in the middle of a bar and the possible lower and higher ranges of breath-alcohol are represented by the upper and lower arms of the line. The line on the left represents the possible ranges of breath-alcohol (zero on the bottom and higher readings on the top).

[15] This example appears in Exhibit 64.

Rod Gullberg in a paper titled Dealing with Uncertainty in Chemical Measurements.[16] Jones writes that his paper is not a "how to do it" text, "because for a proper understanding and interpretation a professional statistician (or Rod Gullberg, Washington State Patrol, Seattle, WA) should be consulted." Id, at p. 7.

In his testimony, Gullberg stated that the breath test program could produce a spreadsheet for each breath test machine[17] showing the confidence interval for each mean breath test measurement possible. Thus, the WTLD could provide a spreadsheet with each breath test reading, allowing a defendant to determine the possible range of his or her breath test in a simple and easy manner.[18] For reasons which were never clearly articulated by any State witness, however, the WTLD does not currently provide defendants with a confidence interval for breath test measurements unless specifically requested.

Analysis

In Reese v. Stroh, 74 Wash.App. 550, (1994), Division 1 of the Court of Appeals documented three concerns related to scientific evidence.[19] First, the Court stated that:

> When a witness gives his personal opinion on the stand - even if he qualifies as an expert - the jurors may temper their acceptance of his testimony with a healthy skepticism born of their knowledge that all human beings are fallible. But the opposite may be true when the evidence is produced by a machine: like many laypersons, jurors tend to ascribe an inordinately high degree of certainty to proof derived from an apparently "scientific" mechanism, instrument, or procedure. Yet the aura of infallibility that often surrounds such evidence may well conceal the fact that it remains experimental and tentative.

[16] International Association for Chemical Testing Newsletter, Dealing with Uncertainty in Chemical Measurements, A. W. Jones, V. 14, N. 1 2003.

[17] The spreadsheet (likely an Excel spreadsheet), would be produced at the time that the QAP is completed for each breath test machine each year.

[18] A confidence interval for all possible breath test measurements may be produced at the time of the QAP because Gullberg's method uses a predetermined formula for the instrument, traceability and biological sampling "errors." The only "unknown error" is each breath test machine's bias, known once the QAP is complete.

[19] While the court in Reese v. Stroh, Id, was discussing the Frye Standard, the court's concerns relating to scientific evidence directly apply to the issues here. Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

Id, at 558. Second, the Court stated that it was concerned about the inherent financial and resource "disadvantages a criminal defendant faces and the difficult task of defending against evidence derived from seemingly infallible scientific techniques." Id, at 558-559. Third, the Court stated that "a criminal defendant is constitutionally guaranteed the right to a fair trial, and the State must prove the defendant's guilt beyond a reasonable doubt. The prosecution should not be permitted to prove its case through the use of less than highly-reliable methodologies and techniques." Id. Overall, the Reese court was concerned about "black boxes,"[20] which they called "technologies that, because they are mechanical or mysterious, appear infallible to the average juror." Id, at 558. A BAC Datamaster is certainly a "black box," as that term is used in Reese. Further, a breath-alcohol measurement is a reading that will appear final and complete to the average person, unaware of the metrological requirement for a measurement of uncertainty.

Scientists, however, aware of the lack of uncertainty measurements in forensic science, are attempting to push the forensic community forward:

- As a general matter, laboratory reports generated as the result of a scientific analysis should be complete and thorough. They should describe, at a minimum, methods and materials, procedures, results, and conclusions, and they should identify, as appropriate, the sources of uncertainty in the procedures and conclusions along with estimates of their scale (to indicate the level of confidence in the results). National Research Council, Strengthening Forensic Science in the United States, A Path Forward, P. 186, 2009, Exhibit 83.
- It is generally agreed that the usefulness of measurement results, and thus much of the information that we provide as an institution, is to a large extent determined by the

[20] The Reese court cited two California cases for its use of the term "black box." People v. Stoll, 49 Cal.3d 1136, 783 P.2d 698, 265 Cal.Rptr. 111 (1989); People v. McDonald, 37 Cal.3d 351, 690 P.2d 709, 208 Cal.Rptr. 236 (1984).

quality of the statements of uncertainty that accompany them. For example, only if quantitative and thoroughly documented statements of uncertainty accompany the results of NIST calibrations can the users of our calibration services establish their level of traceability to the U. S. standard of measurement maintained at NIST. National Institute of Standards and Technology, Guidelines for Evaluation and Expressing the Uncertainty of NIST Measurement Results, Foreword (to the 1993 Edition) 1994.

- Knowledge of the uncertainty associated with measurement results is essential to the interpretation of the results….Without information on uncertainty, there is a risk of misinterpretation of the results. Incorrect decisions taken on such a basis may result in unnecessary expenditure in industry, incorrect prosecution in law, or adverse health or social consequences. ISO/TS 21748, Guidance for the use of repeatability, reproducibility and trueness estimates in measurement uncertainty estimation, First Edition, Introduction, 2004.
- No important measurement process is complete until the results have been clearly communicated to and understood by the appropriate decision maker. Forensic measurements are made for important reasons. People, often unfamiliar with analytical concepts, will be making important decisions based on these results. Part of the forensic toxicologist's responsibility is to communicate the best measurement estimate along with its uncertainty. Insufficient communication and interpretation of measurement results can introduce more uncertainty than the analytical process itself. The best instrumentation along with the most credible protocols ensuring the highest possible quality control will not compensate for the unclear and insufficient communication of measurement results and their significance. Rod Gullberg, Statistical Applications in

Forensic Toxicology, Medical-Legal Aspects of Alcohol, P. 457, 504 James Garriott Editor, 5th Ed. 2009.

In September of 2009, the WTLD advanced the cause of accuracy and thus, justice in the area of forensic breath-alcohol testing when it formally adopted Rod Gullberg's procedures for the determination of the confidence intervals in breath tests in Washington State.[21] Yet, as previously stated, at the same time the WTLD, inexplicably, decided not to report uncertainty in all breath-alcohol readings.[22] For those savvy enough to determine that it was available, the new policy provided that a breath-alcohol test confidence interval would be provided upon request as resourced permitted. Thus, breath-alcohol measurements would still be offered without a confidence interval, defendants would not be informed that a confidence interval was available, and the confidence interval would be provided only as resources permitted. While it appears likely that the WTLD is moving toward the point where it will provide confidence intervals in all breath-alcohol measurements, the WTLD has not yet set a time frame for the disclosure of uncertainty in all breath-alcohol measurements.

Limited Case Law Authority on Uncertainty

Only two other state courts have specifically considered the issue of uncertainty as it relates to breath-alcohol tests. In those two cases, the Nebraska Supreme Court and a Hawaii appellate court determined that the State's failure to include an uncertainty measurement along with the breath test reading left the trier of fact without a critical fact. The Nebraska Supreme Court stated:

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[21] This step forward may serve as a catalyst to move breath-alcohol testing on a national level toward more rigorous science.

[22] In fact, WTLD procedures do not even inform a defendant of the availability of an uncertainty measurement.

> While the Legislature has the acknowledged right to prescribe acceptable methods of testing for alcohol content in body fluids and perhaps even the right to prescribe that such evidence is admissible in a court of law, it is a judicial determination as to whether this evidence is sufficient to sustain a conviction, if the evidence is believed. The Legislature has selected a particular percent of alcohol to be a criminal offense if present in a person operating a motor vehicle. It is not unreasonable to require that the test, designed to show that percent, do so outside of any error or tolerance inherent in the testing process.

State v. Bjornsen, 201 Neb. 709, 271 N.W.2d 839, 840 (1978). The same reasoning was reflected in the decision of the Hawaii appellate court:

> In both of the cases at bar, the State has failed to establish a critical fact. The State merely demonstrated that the reading of the breathalyzer machine was 0.10% for Defendant Boehmer and 0.11% for Defendant Gogo. The inherent margin of error could put both defendants' actual blood alcohol level below the level necessary for the presumption to arise. The failure of the prosecution to establish beyond a reasonable doubt that the actual weight of alcohol in defendants' blood was at least .10% required the trial judge to ignore the statutory presumption in its determination.

State v. Boehmer, 1 Haw.App. 44, 47 (1980). While these cases only stand for the proposition that breath tests close to a legal reference level may not be relied upon for a per se conviction, they also reflect that fact that the only two state courts to consider the question of uncertainty in breath test cases both determined that the issue was one of great importance.

Due Process and Discovery Requirements

The WTLD understandably believes that it should not have to defend its uncertainty procedures when it is leading the nation's forensic laboratories and breath test programs in that very area. Yet, in criminal justice, the actions of all participants are appropriately affected by every defendant's constitutional rights.

A good detective may be certain that an already identified suspect committed a crime, yet in the process of gathering evidence, he or she will let the evidence lead where it may. The same detective will then testify truthfully and completely, letting the criminal justice system reach an independent conclusion as to guilt or innocence.

A prosecutor is a participant in a system of criminal justice which is, by design, adversarial. Yet, a good prosecutor will never let the desire to "win" overcome his or her sense of justice.

A trial court will follow precedent when it rules on matters before the court, but precedent will never be allowed to overcome the determination of a good judge to do justice in each and every case.[23]

What was trustworthy and reliable yesterday may not be today. As concepts of justice advance through each generation of police, criminal justice practitioners,[24] attorneys and judges, we aim to provide better justice than was provided by those before us.[25] As concepts of science change, we also need to be ready to move forward with those new, better practices.[26]

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[23] Provided, of course, that the judge can articulate a basis distinguishing, in some manner, the precedent from the case at hand.

[24] Here, we do intend to refer to all of the dedicated scientists and administrators in the WTLD.

[25] We do this, of course, by standing on the shoulders of all previous criminal justice practitioners.

[26] As Judge Harry T. Edwards, stated:

> In my testimony before the Senate Judiciary Committee in March 2009, I suggested – contrary to the mischaracterization of my position in the Government's briefs – that "courts [would] take the findings of the committee regarding the scientific foundation of particular types of forensic science evidence into account when considering the admissibility of such evidence in a particular case." As I explained to the Senate Committee, because the Report presents "findings about the current status of the scientific foundation of particular areas of forensic science," it would be "no surprise if the report is cited authoritatively" by the courts in their assessment of particular cases.
>
> Why was that my prediction? Because it seemed quite obvious, at least to me, that if a particular forensic methodology or practice, once thought to be scientifically valid, has been revealed to lack validation or reliability, no prosecutor would offer evidence derived from that discipline without taking the new information into account and no judge would continue to admit such evidence without considering the new information regarding the scientific validity and reliability of its source. Nothing in Frye or Daubert commands unyielding adherence to past methodologies or practices once they are found wanting. As one state court in a Frye jurisdiction has aptly observed:
>
>> Science moves inexorably forward and hypotheses or methodologies once considered sacrosanct are modified or discarded. The judicial system, with its search for the closest approximation to the "truth," must accommodate this ever-changing scientific landscape.

Nor should the court allow an instrument or a machine to determine an element of a criminal offense - unless there are appropriate safeguards to ensure that the evidence provided by the machine is what it purports to be. It bears repeating that - these safeguards are foundational to our criminal justice system. As stated in Brady v. Maryland, 373 U.S. 83, 87, 83 S.Ct. 1194, 10 L.Ed.2d 215 (1963):

> Society wins not only when the guilty are convicted but when criminal trials are fair; our system of the administration of justice suffers when any accused is treated unfairly. An inscription on the walls of the Department of Justice states the proposition candidly for the federal domain: 'The United States wins its point whenever justice is done its citizens in the courts.'

When a witness is sworn in, he or she most often swears to "tell the truth, the whole truth, and nothing but the truth."[27] In other words, a witness may make a statement that is true, as far as it goes. Yet there is often more information known to the witness, which if provided, would tend to change the impact of the information already provided. Such is the case when the State presents a breath-alcohol reading without revealing the whole truth about it. That whole truth, of course, is that the reading is only a "best estimate"[28] of a defendant's breath-alcohol content. The true measurement is always the measurement coupled with its uncertainty.

The Fifth Amendment to the United States constitution requires that no person be "deprived of life, liberty, or property, without due process of law." Most, if not all of the criminal rules of

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> The Supreme Court made the same point in Daubert when it reminded us that "scientific conclusions are subject to perpetual revision." I really do not understand how any jurist could reasonably think otherwise.

The Honorable Harry T. Edwards, The National Academy of Sciences Report on Forensic Sciences: What it Means for the Bench and Bar, Page 5, May 6, 2010, (footnotes omitted). Judge Edwards was a participant in the panel which produced the report titled: National Research Council, Strengthening Forensic Science in the United States, A Path Forward, Id.

[27] ER 603 requires that a witness state an oath or affirmation before testifying and RCW 5.28.020 suggests that: "the person who swears holds up his hand, while the person administering the oath thus addresses him: "You do solemnly swear that the evidence you shall give in the issue (or matter) now pending between . . . . and . . . . shall be the truth, the whole truth, and nothing but the truth, so help you God."

[28] In argument, the State used the term "best estimate" many times when describing a breath-alcohol measurement which did not yet have a confidence interval attached to it.

procedure and rules of evidence are designed to ensure a defendant's right to a fair trial.[29] Fundamental to this is a defendant's right to discovery. "The Fifth Amendment to the United States requires that prosecutors make available evidence "favorable to an accused ... where the evidence is material either to guilt or to punishment." " State v. Boyd, 160 Wash.2d 424, 434, (2007), (quoting Brady v. Maryland, Id, at 87-88). The process and the result of discovery is a very important part of the criminal justice procedure. In a comment to proposed Rule CrR 4.7,[30] the Criminal Rules Task Force stated:

> "In order to provide *adequate information for informed pleas, expedite trials, minimize surprise, afford opportunity for effective cross-examination, and meet the requirements of due process*, discovery prior to trial should be as full and free as possible consistent with protections of persons, effective law enforcement, the adversary system, and national security."

State v. Yates, 111 Wash.2d 793, 797 (1988) (emphasis added) (quoting Criminal Rules Task Force, Washington Proposed Rules of Criminal Procedure 77). See also, State v. Boyd, Id.

In addition to the requirements of due process, a prosecutor must also provide a defendant with exculpatory evidence pursuant to court rule:

> Except as otherwise provided by protective orders, the prosecuting authority shall disclose to defendant's lawyer any material or information within his or her knowledge which tends to negate defendant's guilt as to the offense charged.

CrRLJ 4.7 (a) (3)[31].

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[29] A preliminary statement in the Rules of Criminal Procedure states that "these rules are intended to provide for the just determination of every criminal proceeding." The rules also state that they should be construed to secure "effective justice." CrRLJ 1.2. A preliminary statement in the rules of evidence states that they are designed "to the end that the truth may be ascertained and proceedings may be justly determined."

[30] The discovery rules for courts of general jurisdiction (CrR) and the discovery rules for courts of limited jurisdiction (CrRLJ) are substantially similar.

[31] Nor may a prosecutor argue that he or she has turned over all exculpatory evidence in the prosecutor's file and does not have the information. As stated in, In re Brennan, 117 Wash.App. 797, 804-805 (2003) :

> In the 1963 case of Brady v. Maryland, [Id.] the United States Supreme Court held that state prosecutors violate a defendant's right to due process when evidence favorable to a defendant is not disclosed. The prosecutor's good faith is unimportant. Further, a prosecutor has the duty to learn of evidence favorable to the defendant that is known to others acting on behalf of the government in a particular case, including the police.

When an individual suspected of Driving Under the Influence submits to a test to measure his or her breath-alcohol content, the breath test instrument will produce two separate readings[32]and the mean of the two samples constitutes his or her breath-alcohol level. Absent a high level of scientific knowledge, this has historically been the end of the line for breath test evidence. Now, however, the availability of a confidence interval for breath-alcohol measurements means that laypeople can understand the true possible value of a mean breath-alcohol measurement. For most people, that understanding will be a revelation. For example, the following mean breath test measurements were taken from Washington State BAC Datamaster breath test measurements:[33]

- Mean result: 0.1545; Confidence interval: 0.1371 - 0.1766
- Mean result: 0.875;   Confidence interval: 0.0769 - 0.1007
- Mean result: 0.1505; Confidence interval: 0.1387 - 0.1608
- Mean result: 0.085;   Confidence interval: 0.0731 - 0.0877

These confidence intervals represent a 99% level of confidence.

When breath-alcohol measurements are close to a reference level (e.g., 0.08),[34] the need for discovery of breath test measurement confidence intervals is obvious. Nonetheless, when one

> The purpose of holding police and others assisting prosecutors so accountable is that "[e]xculpatory evidence cannot be kept out of the hands of the defense just because the prosecutor does not have it." Otherwise, prosecutors could instruct those assisting them not to give the prosecutor certain types of information, resulting in police and other investigating agencies acting as the final arbiters of justice.

(Footnotes omitted.)

[32] A suspect provides two separate samples of his or her breath.

[33] These results are contained in Exhibit 64 and were obtained from DUI suspects in Washington State. The confidence intervals were determined by the WTLD using the method now adopted by the WTLD.

[34] The most important reference level in Washington State is the 0.80 level. But as noted in Ahmach, three other reference levels exist: 0.02, 0.04 and 0.15.)

(mean) breath-alcohol measurement may constitute the principle element in a criminal charge, it is hard to imagine a situation where a confidence level would not be important.[35]

Thus, we now place the State on notice that every discovery packet supplied to defendants must contain the confidence interval for any breath-alcohol measurement the State intends to offer into evidence in that case. Should the State fail to comply with this discovery order, then upon objection, such breath-alcohol measurement will not be admitted at trial.

Moreover, should the State fail to comply with this discovery order, upon appeal of any guilty verdict where one of the elements is a breath-alcohol reading above the legal limit, the State may subject itself to an appeal of the verdict upon the ground that it failed to provide exculpatory evidence to the defendant. Should the appellate court determine that the failure to disclose the confidence interval was "material either to guilt or punishment," the defendant’s conviction would be reversed. United States v. Bagley, 473 U.S. 667, 105 S.Ct. 3375, 3379, 87 L.Ed.2d 481 (1985).

ER 702 and Confidence Intervals

As we stated in Ahmach:

> A breath test reading is not admissible absent expert testimony, either in person or by affidavit as allowed by CrRLJ 6.13(c). Pursuant to ER 702, however, an expert may only testify “if scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue.” In a criminal prosecution, a post Frye analysis of the admissibility of expert testimony under ER 702 is a consequential activity with independent force and effect. “In this state ER 702 has a

[35] In hindsight (post-trial), it may be possible to determine how much weight a jury may have placed upon a breath-alcohol measurement relative to all other evidence. At the pretrial stage it is much more difficult to make that determination.

It is also worth noting that, with breath-alcohol readings which are not close to a reference level, jurors may actually find that the existence of a confidence level gives them more confidence in the final result – based upon the fact that so much effort has gone into ensuring that an accurate measurement is ultimately produced. This Court is not making such a determination. It is enough to understand that a jury may give less weight to a breath-alcohol measurement with a confidence interval.

significant role to play in admissibility of scientific evidence aside from Frye." State v. Copeland, 130 Wn.2d 244, 259-260 (1996).

Under Jensen, [City of Fircrest v. Jensen, 158 Wn.2d 384, (2006)] therefore, after the prosecution has met its prima facie burden for the admission of a BAC reading, a trial court must engage in a meaningful review of the admissibility of the BAC evidence involving, under ER 702, a two part test. State v. Cauthron, 120 Wn.2d 879, 890 (1993). As in Copland, [State v. Copeland, 130 Wn.2d 244 (1996)], the Cauthron court was concerned with the admissibility of DNA evidence:

> The 2-part test to be applied under ER 702 is whether: (1) the witness qualifies as an expert and (2) the expert testimony would be helpful to the trier of fact. Part 2 of this standard should be applied by the trial court to determine if the particularities of the DNA typing in a given case warrant closer scrutiny. 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.
>
> Cauthron, [State v. Cauthron, 120 Wn.2d 879, 890 (1993)].

Ahmach, p. 14. (Footnotes omitted.)

In Cauthron, Id, the court considered the admissibility of DNA typing. Before reaching their decision, the Cauthron court cited a report on DNA typing produced by the National Academy of Sciences.[36] Ultimately the court concluded that:

> The Committee's view supports the conclusions reached in the courts:
>
> To say that two patterns match, without providing any scientifically valid estimate (or, at least, an upper bound) of the frequency with which such matches might occur by chance, is meaningless.

Cauthron, Id, at 907, (quoting DNA Technology, at 74.)

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[36] The Cauthron court stated:

> "Cauthron appealed and we accepted certification from the Court of Appeals. After oral argument, but before the court issued its opinion, we requested additional briefing on the applicability of a National Academy of Sciences document: Committee on DNA Technology in Forensic Science, DNA Technology in Forensic Science (National Academy Press 1992) (hereinafter DNA Technology). A committee of eminent scientists and jurists (hereinafter Committee) exhaustively researched and analyzed the current status of forensic DNA typing."

Cauthron, Id, at 885.

Here, the State argues that it should be allowed to present breath-alcohol readings without also providing an accompanying estimate of uncertainty. While a breath-alcohol measurement has meaning without a confidence interval, a breath-alcohol measurement without a confidence interval is inherently misleading.

In State v. Stenson, 132 Wash.2d 668 (1997), the court was presented with a scientific process or procedure which produced a result. However, that result, it was determined, would not have been admissible without, for lack of a better word, a proviso.

In Stenson, a phenol test was administered on an apparent blood splatter to determine if it was, in fact, blood. A phenol test, however, is only a "presumptive" test for blood. So the Stenson court stated:

> Since the jury repeatedly heard that the phenol test was only presumptive for the presence of blood and did not confirm the stains were in fact human blood, the question was one of weight and not of admissibility. Lack of certainty in scientific tests (that are generally accepted by the scientific community) goes to the weight to be given the testimony, not to its admissibility. Lord, [State v. Lord, 117 Wash.2d 829, 854-55 (1991)]. Similarly, the credibility of experts offering conflicting testimony is for the trier of fact. State v. Benn, 120 Wash.2d 631, 662, 845 P.2d 289 (1993). *So long as a jury is clearly told that the phenol test is only a presumptive test and may indicate a substance other than human blood, it is admissible under ER 702.*

Id, at 717-18, (Emphasis supplied). Once a person is able to see a confidence interval along with a breath-alcohol measurement, it becomes clear that all breath-alcohol tests (without a confidence interval) are only presumptive tests. The presumption, or course, is that a breath-alcohol reading *is* the mean of two breath samples. This answer, however, is obviously incomplete.[37] As discussed above, a breath test reading is only a "best estimate" of an individual's breath-alcohol level. The determination of a confidence interval completes the evidence.

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[37] Put another way, a breath-alcohol measurement without an uncertainty measurement does not tell the "whole truth." RCW 5.28.020.

Therefore, upon objection, a breath-alcohol measurement will not be admitted absent its uncertainty level, presented as a confidence interval.[38]

ER 403, ER 901 and Foundational Requirements

Defendants also argue for suppression of breath-alcohol measurements, absent a measurement for uncertainty, under ER 403, and in later supplemental briefing, under ER 901. While Defendant's make a compelling argument for suppression under ER 403[39] and ER 901,[40] case law supporting suppression under these court rules - in the area of scientific processes - is lacking. Courts have historically cited ER 702 when dealing with scientific processes. Arguably, ER 901 (a) (9) may provide a better fit when specifically considering a scientific/mechanical process which produces a result. Yet, the case cited by defendants[41] follows a line of cases dealing with the authentication of the processes used to determine whether a speed measuring device used in traffic infractions produces an accurate result. Again, while these cases are analogous on a logical level, they do not represent strong authority under the facts herein.

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[38] To be clear, the WTLD could decide that uncertainty should be shown by an alternate scientifically acceptable method. This decision is left to the WTLD or any witness presented by the State or a defendant. It is unlikely, however, that the WTLD will change course and use anything other than the Rod Gullberg developed confidence interval for breath-alcohol measurements.

[39] ER 403 states that:

> Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.

[40] ER 901 states (in relevant part):

> (a) General Provision. The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.
> …
> (9) Process or System. Evidence describing a process or system used to produce a result and showing that the process or system produces an accurate result.

[41] State v. Bashaw, 169 Wn.2d 133 (2010).

The State, on the other hand, in addition to arguing that ER 702 and ER 403 do not apply, also argues that this panel should focus on the question of the basic foundational requirements of statute,[42] the protocols of the WTLD and the protocols of most, if not all, other state breath test programs. Yet, as stated in Jensen, Id, a trial court will consider the requirements and restrictions of ER 702 after the state has met its prima facie burden for the admissibility of evidence, i.e., after the State has met its foundational burden.

Remedy

Under the Due Process Clause, the Rules of Criminal Procedure and ER 702, absent a confidence interval, a breath-alcohol measurement will be suppressed. In juxtaposition, however, to the more common bases for suppression, an order of suppression related to the State's failure to provide a confidence interval with a breath-alcohol measurement will remain in effect only so long as the State fails to produce the confidence interval.[43] For Mr. Fausto and Ms. Ballow, the State may easily remedy the omission by providing the confidence interval for each defendant's mean breath-alcohol measurement.[44]

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[42] RCW 46.61.506 (1).

[43] For discovery violations, Division I of the Court of Appeals has stated that "significantly, exclusion of evidence as a sanction was expressly rejected by the Washington Judicial Council and the Washington Supreme Court." State v. Glasper, 12 Wash.App. 36, 38 (1974).
See also, CrRLJ (H) (7) (i), which states:

> If at any time during the course of the proceedings it is brought to the attention of the court that a party has failed to comply with an applicable discovery rule or an order issued pursuant thereto, the court may order such party to permit the discovery of material and information not previously disclosed, grant a continuance, or enter such other order as it deems just under the circumstances.

Most CrRLJ 3.6 motions will result in a suppression order which is final, unless appealed. In these common CrRLJ 3.6 motions, suppression occurs because the State cannot remedy the problem (or failed to provide testimony that would support probable cause to stop, detain or arrest the defendant).

[44] In all other cases, the State should provide confidence intervals in discovery. In cases where discovery is already complete, the State should provide confidence intervals as soon as it is able. Because of the sweeping nature of this ruling, should the State require more time, leave for more time should be requested of the trial court in each separate case. Absent approval of the trial court judge, the State should not adopt a policy of waiting until trail to remedy the absence of a confidence interval. Should the State mistakenly decide to follow such a course, the trial court would

Conclusion

The WTLD has greatly advanced the forensic science involved in breath-alcohol testing with the adoption of a procedure for the determination of uncertainty through the use of a confidence interval. Attaching a confidence interval to a breath-alcohol measurement is, at the same time, both impressive - in the increased reliability of all breath test readings - and stunning - when it is seen that, absent a confidence interval, a “final” breath-alcohol measurement is only a “best estimate” of a person’s breath-alcohol level. Given the requirements of due process, the discovery rules and ER 702, therefore, the State must provide Defendants with a confidence interval for each Defendant’s breath-alcohol measurement. Absent this information, a defendant’s breath-alcohol measurement will be suppressed.

Dated this 21st day of September, 2010

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Judge David Steiner

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Judge Darrell Phillipson

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Judge Mark Chow

have the power to grant such orders as it deems just, including the power grant the defendant a continuance and the power to impose sanctions.