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IN THE SUPREME COURT

STATE OF ARIZONA

IN THE MATTER OF:	**R-10-0035**
PETITION TO AMEND ARIZONA RULES OF EVIDENCE, AS APPROPRIATE, TO CONFORM TO FEDERAL RULES OF EVIDENCE	**ARIZONA JUSTICE PROJECT'S COMMENT TO PETITION TO AMEND ARIZONA RULES OF EVIDENCE SUPPORTING THE ADOPTION OF THE *DAUBERT* STANDARD AND FEDERAL RULE OF EVIDENCE 702**

I. INTRODUCTION

The Bar and the Court are considering a question of fundamental importance. The Arizona Justice Project, judges, and criminal practitioners know the importance of the question whether Arizona will bring to bear meaningful judicial scrutiny of "expert" testimony in criminal cases.

We understand that the rule under consideration may have application in civil and criminal cases. We understand that it is reasonable to believe that one rule on the admissibility of expert testimony is better than two. If there is to be one rule, however, and because the stakes in criminal cases are so high, that rule must be one that requires

meaningful judicial scrutiny of the use of expert testimony in criminal cases. Moreover, what people think about our justice system in Arizona is most powerfully controlled by what they think about the way in which we deliver criminal justice.

Arizona cannot remain a so-called *Frye* State. The United States Supreme Court decided *Daubert* 18 years ago. Most States have long ago become ones that employ the gate-keeping scrutiny set forth by the Supreme Court in that unanimous decision. Arizona remains one of the few States that has not. We suspect that Arizona has not become a "*Daubert*" State for reasons related to views about the admissibility of expert testimony in civil cases. We do not denigrate the importance of civil cases, however, by saying that they should not control the decision whether Arizona decides to employ reasonable scrutiny of the admissibility of expert testimony in criminal cases. Issues of personal liberty – indeed life and death itself – must take precedence.

The essence of *Daubert* is simple. Admissibility of expert testimony requires more than a finding by a court that the testimony of a proffered expert is "a subject of reasonable acceptance." *Daubert* jettisoned this standard 18 years ago in all cases and rejected the notion that general acceptance is enough, and instead required an analysis that at bottom goes to whether there is any underlying scientific basis for the opinions offered. As discussed below, there can be no doubt that asking questions beyond the question of "reasonable acceptance in the relevant scientific community" is critical to the wellbeing of our criminal justice system. Most of the flawed expert testimony introduced by the prosecution in cases where convictions were obtained wrongfully passed the *Frye* general

acceptance test.[1] In many of these cases, we know that a *Daubert* analysis of the testing, research, methodology and reliability of expert opinions would have found those opinions totally lacking—ballistics, bite-marks, arson, shaken baby syndrome, and so on.

II. Raising the Bar: *Daubert* helps prevent admission of faulty or unvalidated forensic evidence.

The 2009 National Academy of Sciences Report[2] demands the criminal justice system raise the bar on the admissibility of forensic evidence:

> Forensic science professionals have yet to establish either the validity of their approach or the accuracy of their conclusions, and the courts have been utterly ineffective in addressing this problem. (NAS Report, p. 53)

The drafters of the 2009 NAS Report researched the alleged scientific basis for each forensic specialty, the training requirements for persons holding themselves out as experts in that field, and the nature of the substantive testimony proffered in court by those persons. With the exception of nuclear DNA analysis, in most areas of forensic science the NAS Report found a clear failure to meet the criteria mandated by a *Daubert* analysis.

Prior to the 1993 *Daubert* decision, all federal courts, as well as the vast majority of state courts, followed the standard set forth in the 1923 decision in *Frye v. United States*.[3] The *Frye* standard, or general acceptance in the expert community, helped determine the admissibility of expert evidence.[4] The *Frye* standard also relied on the relevance of the

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[1] The vast majority of DNA exonerations (87%, or 237 of the 271 exonerations) were convictions obtained prior to 1994 - thus before *Daubert* was decided.

[2] National Research Council of the National Academies of Science, Committee on Identifying the Needs of the Forensic Science Community, Strengthening Forensic Science in the United States: A Path Forward (2009) [hereinafter, NAS Report].

[3] Heather G. Hamilton, *The Movement from* Frye *to* Daubert, 38 JURIMETRICS J. 201, 209 (1998) (noting 45 states followed a *Frye*-like test when the Supreme Court decided *Daubert*).

[4] Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, A Half-Century Later* 80 COLUM. L. REV. 1187, 1200 (1980); Lloyd Dixon & Brian Gill, *Changes in the Standards for*

proposed evidence as a second guiding principle. In *Frye*, the Court of Appeals of the District of Columbia declined to admit expert testimony on the results of a systolic blood-pressure deception test, finding that the test itself, and therefore any expert opinions based on the test, lacked sufficient standing and acceptance within the field to warrant admission.[5]

By raising the bar initially established in *Frye, Daubert* strengthens the court's ability to prevent flawed or speculative forensic "science" from being admitted into court. *Daubert* is a much needed step forward, combining scientific and legal standards to change the way courts approach forensic evidence and expert testimony.[6] *Daubert* impacts the way courts deal with forensic evidence in two primary ways: 1) increased judicial responsibility and 2) increased structure.[7] Accordingly, *Daubert* expands judicial responsibilities by requiring the court to take an active gatekeeping role in assessing forensic evidence.[8] *Daubert* gives needed structure by permitting judges to conduct pre-trial hearings on the admission of expert evidence using specific substantive criteria found in the decision. These criteria are (1) whether the theory or technique at issue can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential error rate of the particular scientific technique; (4) the existence and maintenance of standards controlling the technique's operation; and (5) the technique's degree of acceptance

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Admitting Expert Evidence in Federal Civil Cases Since the Daubert Decision, 8 PSY. PUB. POL. & L. 251, 252 (2001); John H. Mansfield, *An Embarrassing Episode in the History of the Law of Evidence,* 34 SETON HALL L. REV. 77 (2003).

[5] 293 F. 1013, 1014 (D.C. Cir. 1923).

[6] *See* Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 592 (1993); David E. Bernstein, *The Unfinished* Daubert *Revolution*, George Mason Law & Economics Research Paper No. 09-18 (2009), *available at:* SSRN: http://ssrn.com/abstract=1354733.

[7] *See* Dixon & Gill, *supra* note 5, at 253.

[8] *See* Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 592 (1993).

within a relevant scientific community.[9] Although flexible, *Daubert* still requires judges, at a bare minimum, to consider these criteria in deciding whether evidence based on the theory or technique is sufficiently reliable to be admissible as scientific evidence.[10] The Court intends for the quality of admitted forensic evidence to be higher under *Daubert* than under *Frye.*[11]

Raising the level of quality of expert evidence benefits the search for the truth because it requires the forensic science community to re-examine their own standards and put their disciplines on sounder scientific footings. For example, evidence of what constituted arson versus an accidental fire has changed over the last few decades because of additional research and experiments. Accordingly, expert testimony on arson evidence faces increased scrutiny following *Daubert.* For example, in a 1998 insurance case, an insurer attempted to introduce expert testimony regarding the origin of the fire in its insured's home.[12] The trial court did not admit the expert's testimony because it was not sufficiently reliable under *Daubert* -- the expert conducted no tests, collected no samples, could not explain the methodology by which he eliminated at least one possible source of fire, and did not give a scientific basis for his opinion that the fire was intentionally set. On appeal, the 11th Circuit held the trial court properly applied *Daubert* in excluding the testimony of the insurer's expert. This was so notwithstanding the expert's testimony that he complied with his field's scientific methodology, *i.e.* his methodology had general acceptance in the field of fire investigation – the old *Frye* standard.[13]

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[9] *Id.*
[10] *Id.* at 593–95.
[11] *Id.* at 592.
[12] *See* Michigan Millers Mutual Ins. Corp. v. Benfield, 140 F.3d 915, 921 (11th Cir. 1998). (Insurer sought to avoid liability under the insurance policy by alleging the fire was an arson fire started by its insured.)
[13] *Id.* at 920.

Another example lies in the field of firearm or ballistics evidence. Such evidence has been admitted under the *Frye* standard and has gone largely unchallenged, despite certain expert conclusions that overstate the significance of the evidence and lack scientific backing. For example, a firearms analyst might testify that the bullet found at a crime scene was fired from a particular gun recovered from the defendant.[14] The 2009 NAS Report noted that such forensic evidence introduced at trial to make identifications lacks any meaningful scientific validation, determination of error rates, or reliability testing.

Fortunately, courts following *Daubert* are beginning to examine firearm evidence more closely, and those courts do not always like what they find. For example, in a 2005 federal prosecution involving gun charges, the defendants challenged the admissibility of forensic ballistics identification evidence.[15] The government expert declared that he could provide a firearm match "to the exclusion of every other firearm in the world."[16] This testimony is an empirically unsupportable exaggeration based on an individual examiner's experience and a probability theory – but lacking serious scientific support. Here, after conducting hearings and reviewing testimony, the judge found that even though the government expert had seven years of experience in the Boston Police ballistics unit, neither he nor the laboratory in which he worked had been certified by any professional organization.[17] Though the expert had "worked on hundreds of cases," he had never been formally tested by a neutral proficiency examiner, nor could he cite any reliable report

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[14] The Justice Project has reviewed many cases where the state's firearm expert made similar conclusions – identifying a particular firearm and excluding all other firearms in the world as the source of origin, while lacking the scientific proof to support the statement, and yet going unchallenged.

[15] *See* U.S. v. Green, 405 F. Supp. 2d 104 (D. Mass. 2005)

[16] *Id.* at 107.

[17] *Id.*

describing his error rates, that of his laboratory, or indeed, that of the field."[18] Clearly disheartened, the judge noted that "[t]his reliance on long-standing use of ballistics evidence in the courts is troubling."[19]

III. The *Daubert* Trilogy: *Kumho Tire* applies *Daubert* to all expert testimony, even if it is not related to "scientific" knowledge.

Arizona should adopt the United States Supreme Court's rationale in *Kumho Tire Co. v. Carmichael* requiring that the *Daubert* "gatekeeping" criteria be applied not just to scientific testimony but to all expert testimony to ensure its reliability.[20] In *Kumho Tire,* the Supreme Court granted certiorari to resolve uncertainty about whether and how *Daubert* should be applied to expert testimony that falls in the realm of "technical" or "other specialized" knowledge, rather than "scientific" knowledge.[21] The Court determined that the *Daubert* gatekeeping obligation *applies to all expert testimony*, not just scientific testimony.[22] *Daubert* recognizes that forensic evidence is subject to human error, misjudgment, and miscalculation. The Court extended that logic in *Kumho Tire*, recognizing that all forms of expert testimony and opinion are subject to these imperfections. Although the *Daubert* Court limited its opinion to scientific knowledge because that was the particular knowledge at issue, the language of Federal Rule of Evidence 702 makes no distinction among the different types of knowledge listed and the evidentiary rationale underlying *Daubert* - that expert witnesses are granted greater latitude than other witnesses on the "assumption that the expert's opinion will have a reliable basis in the knowledge and

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[18] *Id.*
[19] *Id.* at 123.
[20] 526 U.S. 137, 141 (1999).
[21] *See* Fed. Rule Evid. 702.
[22] 526 U.S. 137, 147 (emphasis added).

experience of his discipline" - is not limited to "scientific" knowledge.[23] Therefore, the *Kumho Tire Co.* rationale helps ensure that expert testimony in any field will satisfy the reliability standard set by the court.

IV. Implementing *Daubert*: The need to protect liberty and lives in criminal trials.

Empirical research demonstrates *Daubert*'s impact.[24] Judges are utilizing their gatekeeping role, analyzing the methods and reasoning of experts, and considering a number of factors in addition to general acceptance to assess the admissibility of certain evidence.[25] Following the *Daubert* and *Kumho Tire* decisions, the proportion of evidence challenged and the proportion of evidence found unreliable indicate the standard for admissibility has indeed been raised and the truth seeking process made more reliable.[26]

Expert evidence proffered by the prosecution has the power to persuade a jury to convict, even when there is substantial doubt as to a defendant's guilt. The arson expert testimony in the now infamous Willingham case is one example.[27] Further, constitutional issues that arise in criminal cases but not in the civil arena raise the stakes as individuals'

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[23] *Id.* at 148.

[24] Dixon & Gill, *supra* note 5, at 297.

[25] *Id.* at 297–98.

[26] *Id.*; Leah Vickers, Daubert, *Critique and Interpretation: What Empirical Studies Tell Us About the Application of* Daubert, 40 U.S.F. L. REV. 109, 137 (2005). Given that some evidence previously admissible is now not admissible after *Daubert*, evidence must meet a higher standard to survive pretrial hearings and motions for summary judgment.

[27] Willingham, convicted of capital murder for a 1991 fire in his home that took the lives of his three young daughters, maintained his innocence until he was executed in 2004. The evidence that supported Willingham's conviction is exactly the type of evidence that has been revealed as erroneous. "Each and every one of the 'indicators' listed by Mr. Vasquez [Deputy State Fire Marshal and the prosecution's lead expert witness] means absolutely nothing, and, in fact, is expected in the context of a fire that has achieved full room involvement, as this fire clearly did. They mean nothing with respect to the origin and cause of the fire, and they absolutely do not support any hypothesis that the fire had been accelerated by liquids." Arson Review Committee. A Peer Review Panel Commissioned by the Innocence Project. *Report on the Peer Review of the Expert Testimony in the Cases of State of Texas v. Cameron Todd Willingham and State of Texas v. Ernest Ray Willis* 38 (2006).

liberty and lives hang in the balance of criminal trials. Ray Krone was sentenced to death in Arizona in 1992 based on commonly accepted odontology testimony. Even though biological material (DNA) lifted from the victim's body and clothes excluded Krone as the donor, a jury convicted Krone, not just once, but twice, of murder. The court in *United States v. Green* noted that "we should require more" with regard to setting the standards governing certain forensic evidence and related testimony that may be used to convict a defendant when liberty, and life itself for those facing death penalty, hangs in the balance.[28]

Furthermore, there is sometimes a danger of subjectivity, or examiner bias, because some expert testimony is developed principally to aid one side in litigation. This danger is more pronounced in criminal cases because most scientific evidence in such cases arises out of "scientific" endeavors closely tied to law enforcement. This notion is captured by a recent study analyzing the trial testimony in 137 cases in which the defendants later were exonerated by DNA testing.

> In conducting a review of these 137 exonerees' trial transcripts, this study found invalid forensic science testimony was not just common but prevalent. This study found that 82 cases – 60% of the 137 in the study set – involved forensic science testimony. The testimony at these 137 exonerees' criminal trials chiefly involved serological analysis (100 cases), and microscopic hair comparison (65), because most of these cases involved sexual assaults for which such evidence was commonly available at the time. Indeed, in many cases, where both hair and semen were recovered from the crime scene, both disciplines were utilized. Some cases also involved testimony concerning: fingerprint comparison (13 cases), DNA analysis (11), forensic geology (6), forensic odontology (6), shoe print comparison (4), fiber comparison (2), voice comparison (1) and fingernail comparison (1).[29]

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[28] 405 F. Supp. 2d 104, 109 (D. Mass. 2005).

[29] Brandon L. Garrett & Peter J. Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 VA. L. REV. 14–15 (2009).

The association between invalid convictions and many forms of routinely admitted forensic science evidence should cause judges, prosecutors, defense attorneys, forensic science communities, and the public to doubt or at least reexamine the scientific validity of certain evidence. *Daubert* provides a mechanism for the court to screen proffered expert and scientific evidence and, if applied properly, can help reduce the admissibility of unreliable evidence.

Forensic science must upgrade its standards to reach the criteria set forth in *Daubert*, but such efforts cannot succeed without parallel changes in courts and in advocacy. The legal system must maintain a healthy skepticism about claims of scientific rigor in order to shield itself from being duped by those who practice "junk science" or "pseudoscience." Junk science repeatedly makes its way into the courtroom when experts offer opinions based merely on intuition or experience, without evidence that their intuitions or experience are any better than those of lay people. The adoption of *Daubert* will help advance scientific evidence both inside and outside of the courtroom.

V. The Arizona Justice Project supports the adoption of *Daubert* and Federal Rule of Evidence 702.

Unreliable science and unquestioned expert testimony simply should not be allowed in a criminal trial. *Daubert* positively impacts the overall litigation process, both from its direct requirements, and also from its implicit message of to safeguard the quality of scientific evidence introduced in the courtroom. Lessons from the not-so-distant past regarding erroneous and faulty expert testimony in a number of different areas – including capital cases - highlight the value in requiring judges to be on guard when determining the admissibility of expert evidence. With the breadth and depth of scientific and other expert

evidence presented to courts today, a thorough examination and consideration of expert testimony and its foundations is essential to a fair trial. By rejecting the sole reliance on the general acceptance standard espoused by *Frye*, and by raising awareness of other factors that should inform a court's decision of admissibility, *Daubert* provides an invaluable screening tool for the justice system and its search for the truth.

RESPECTFULLY SUBMITTED this 20th day of May, 2011.

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By: