

**FOR PUBLICATION**

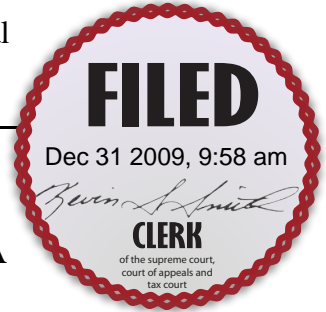
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**IN THE  
COURT OF APPEALS OF INDIANA**

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JENNIFER L. MOGG,  
Appellant-Defendant,

vs.

STATE OF INDIANA,  
Appellee-Plaintiff.

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No. 29A04-0902-CR-82

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APPEAL FROM THE HAMILTON SUPERIOR COURT  
The Honorable Wayne A. Sturtevant, Judge  
Cause No. 29D05-0610-CM-6683

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**December 31, 2009**

**OPINION - FOR PUBLICATION**

**ROBB, Judge**

### Case Summary and Issues

Jennifer Mogg pled guilty to operating a vehicle while intoxicated, a Class A misdemeanor, and her jail sentence was suspended to probation. Following an admitted violation of her probation, which included as a condition that she consume no alcoholic beverages, the trial court extended Mogg's probation and imposed a further condition that she continuously wear a Secure Continuous Remote Alcohol Monitor ("SCRAM") bracelet. Following subsequent allegations of probation violations, the trial court revoked Mogg's probation on the basis of findings she consumed alcohol as evidenced by positive readings while on SCRAM. Mogg now appeals the revocation of her probation, raising a single issue that we expand and restate as: 1) whether the trial court abused its discretion in admitting evidence of Mogg's alcohol consumption generated by the SCRAM system; and 2) whether sufficient evidence supports the revocation of Mogg's probation. We conclude the trial court, based upon the uncontroverted expert testimony and evidence before it, did not abuse its discretion in determining the SCRAM readings were sufficiently reliable to be admissible as evidence of Mogg's alcohol consumption for purposes of a probation revocation. As a result, sufficient evidence supports the revocation of Mogg's probation, and we affirm the judgment of the trial court.

## Facts and Procedural History<sup>1</sup>

On January 16, 2007, Mogg pled guilty to operating a vehicle while intoxicated, a Class A misdemeanor. The trial court sentenced her to 365 days in jail, all suspended to probation. Condition 15 of Mogg's probation prohibited Mogg from consuming or possessing alcoholic beverages. On August 2, 2007, the State alleged Mogg violated her probation by being publicly intoxicated or operating a vehicle while intoxicated; as a condition of her bond, she was required to wear a SCRAM bracelet. In January 2008, Mogg was placed on a SCRAM II bracelet, an updated version of SCRAM. On March 17, 2008, Mogg admitted violating her probation in an agreement that extended her probation by four months and required her to remain on SCRAM II.

On June 20, 2008, the State filed an information of probation violation alleging Mogg violated her probation by consuming alcohol on June 14 and 15, 2008, "as evidenced by . . . 2 positive SCRAM events." Appellant's Appendix at 83.<sup>2</sup> On November 12, 2008, the State filed another information of probation violation alleging Mogg violated her probation by consuming alcohol on October 31 and November 1, 2008, "as evidenced by positive readings for alcohol while on SCRAM." Id. at 113.

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<sup>1</sup> We heard oral argument on December 3, 2009, at the Court of Appeals courtroom in Indianapolis. We commend counsel for their excellent oral advocacy.

<sup>2</sup> The State also alleged Mogg violated her probation by being in arrears on various court costs and fees that were conditions of probation. However, the trial court found "no willful violation" of these conditions and did not rely on them as a basis for revoking Mogg's probation. Appellant's App. at 134; cf. Ind. Code § 35-38-2-3(f) (probation may not be revoked for noncompliance with financial obligations "unless the person recklessly, knowingly, or intentionally fails to pay").

On December 8, 2008, the trial court held an evidentiary hearing on both informations. The State called Jeffrey Hawthorne, whom the trial court qualified as an expert witness based on his training as an electrical engineer, his experience in research and development of a hand-held alcohol breathalyzer, his position as co-founder and chief technology officer of Alcohol Monitoring Systems, Inc. (“AMS”), where he co-invented the SCRAM system, and his prior qualification as an expert witness in numerous jurisdictions. According to Hawthorne’s testimony, the SCRAM system, which AMS manufactures, measures concentrations of transdermal alcohol, that is, alcohol perspired through a person’s skin as sweat or vapor. Transdermal alcohol concentration (“TAC”) rises and falls on a curve that lags four to five hours behind the curve of blood alcohol concentration, as it takes longer for alcohol to be perspired through a person’s skin than to be absorbed into the bloodstream. The SCRAM bracelet, attached to the person’s lower leg or ankle, uses a fuel cell to detect alcohol in vapor drawn into a collection chamber, and this alcohol detection technology is similar to that employed in many breath-testing devices.

Hawthorne testified the SCRAM bracelet electronically transmits, every thirty minutes, transdermal alcohol readings through a modem in the person’s residence to an AMS central computer. An AMS technician monitors the flow of data, AMS analyzes the data, and AMS and its local service provider (here, Total Court Services, Inc.) notify the probation office supervising the person when the data indicate alcohol consumption of more than one drink per hour for an average person. The SCRAM system “does not ‘flag’ an event until three consecutive readings exceed [TAC of] 0.02%,” which the average person reaches only

with “more than one drink in his or her system. This gives the wearer the benefit of the doubt.” Transcript at 299. When an alcohol consumption event is indicated, the person is given an opportunity to provide AMS with an alternative explanation for the positive readings, such as an environmental “interferant” or other non-beverage alcohol exposure. Id. at 312. AMS technicians are trained to distinguish the TAC curve resulting from a true drinking event from one that is the result of an interferant. According to Hawthorne, the SCRAM system is not designed to measure a precise amount of alcohol in the body, rather, it is a “semi-quantitative” screening device for determining “whether a person consumed a small, moderate or large amount of alcohol.” Id. at 290. AMS protects against mechanical error by testing all SCRAM bracelets before shipping them, calibrating each bracelet before placing it online, and running remote diagnostic checks. AMS has tested the accuracy of the SCRAM system in a study involving 839 total events, which registered 62 true positive drinking events and one false positive.

The State also called Joe Cook, an employee of Total Court Services who fitted Mogg with the SCRAM II device. According to Cook, he had received twenty-four hours of training from AMS on both SCRAM I – the original version of the SCRAM bracelet – and SCRAM II, including how to properly fit a person with the SCRAM II bracelet. Cook testified he fitted Mogg’s bracelet in accordance with his training, initialized the bracelet, and at that time the bracelet was working properly. The State also offered, and the trial court admitted over Mogg’s objection, the violation report from the SCRAM system showing,

based on Mogg's TAC graphs for the dates in question, two confirmed alcohol consumption events by Mogg on June 13-14, 2008, and October 31-November 1, 2008.

As a foundation for the reliability of the SCRAM results, the State offered, and the trial court admitted, two published studies. The first study (the "Sakai study") was published as Joseph T. Sakai et al., *Validity of Transdermal Alcohol Monitoring: Fixed and Self-Regulated Dosing*, 30 Alcoholism: Clinical and Experimental Research 26 (2006). The Sakai study showed that in a laboratory study involving twenty-four persons and over eighty samples from those who did not consume alcohol, the SCRAM I bracelet had no false positive readings. However, "the [SCRAM I] device consistently detected consumption of approximately 2 standard drinks." Tr. at 226. The Sakai study was funded in part by a grant from AMS. The second study (the "NHTSA study") was a November 2007 report of the National Highway Traffic Safety Administration, which involved twenty-two persons who wore SCRAM I over a period averaging four weeks per person and engaged in laboratory-dosed and self-dosed drinking totaling 271 episodes. The study concluded SCRAM I had no "false-positive problems when true BAC was <.02 g / dL." Id. at 241. The problems identified with SCRAM I were false negatives and that the bracelet's sensitivity and accuracy declined over the duration of wear. Hawthorne testified SCRAM II involves the same technology and scientific principles as SCRAM I, the only difference between the two units being the components of SCRAM II are smaller and fit "in one case rather than in two cases." Id. at 88.

Mogg did not present any expert testimony to controvert the testimony of Hawthorne or the published studies. Rather, Mogg relied upon two documentary exhibits, one of which was an internet blog by an unidentified author criticizing the reliability of SCRAM and hypothesizing various causes of false positive readings. The other exhibit was a 2006 Michigan Bar Journal article authored by the Honorable Dennis N. Powers, a Michigan trial judge, and his law clerk. The Powers article articulated a legal argument that SCRAM data were not sufficiently reliable to be admissible in a bond revocation hearing, but did not dispute the validity of the scientific principles or study data testified to by Hawthorne. Mogg testified and denied consuming any alcohol on or around the days for which the SCRAM system gave positive readings. Mogg also offered, and the trial court admitted, an affidavit from an acquaintance of Mogg who observed her drinking only water while at a restaurant on the evening of June 13, 2008.

On December 18, 2008, the trial court entered findings of fact in which it found SCRAM's theory and technique had been tested, had been subjected to peer review and publication, had a known error rate, were subject to operational standards maintained by AMS, and were accepted in forty-six states. In addition, the trial court found the testing and studies of SCRAM I applied equally to support the reliability of SCRAM II. The trial court concluded "the testimony of Mr. Hawthorne regarding the results of the monitoring of [Mogg] . . . was properly admitted because the scientific principles upon which the operation of the unit and Mr. Hawthorne's testimony rests are reliable as required." Appellant's App.

at 133. Based on the positive SCRAM results, the trial court found Mogg violated her probation by consuming alcohol in June 2008 and again on October 31- November 1, 2008.

On January 26, 2009, the trial court issued its order revoking Mogg's probation and ordering her to serve the balance of her previously-suspended jail sentence. The trial court thereafter denied Mogg's motions for modification of her sentence. Mogg now appeals.

### Discussion and Decision

#### I. Admissibility of SCRAM Readings

##### A. Standard of Review

The trial court's decision to admit or exclude evidence in a probation revocation hearing is reviewed on appeal for an abuse of discretion. Payne v. State, 515 N.E.2d 1141, 1143 (Ind. Ct. App. 1987), disapproved on other grounds, Cox v. State, 706 N.E.2d 547, 551 n.10 (Ind. 1999). The abuse of discretion standard applies equally when reviewing the trial court's decision to admit or exclude expert scientific testimony. See Carter v. State, 766 N.E.2d 377, 380 (Ind. 2002) (abuse of discretion standard applies to review of evidentiary rulings under Indiana Evidence Rule 702). An abuse of discretion occurs when the trial court's decision is clearly against the logic and effect of the facts and circumstances before it. Smith v. State, 889 N.E.2d 836, 839 (Ind. Ct. App. 2008). In determining whether the trial court abused its discretion, we do not reweigh evidence and consider conflicting evidence in a light most favorable to the trial court's ruling. Id.



## B. Reliability of SCRAM Readings to Show Alcohol Consumption

### 1. Scientific Evidence in Probation Revocation Hearings

The Indiana Rules of Evidence, except regarding privileges, do not apply in probation proceedings. Ind. Evidence Rule 101(c)(2). Rather, in probation revocation hearings, the trial court “may consider any relevant evidence bearing some substantial indicia of reliability.” Cox, 706 N.E.2d at 551. “Judges are not, of course, bound to admit all evidence presented to the court. In fact, the absence of strict evidentiary rules places particular importance on the fact-finding role of judges in assessing the weight, sufficiency and reliability of proffered evidence.” Id.; see also Reyes v. State, 868 N.E.2d 438, 440-42 (Ind. 2007) (holding, in light of due-process principles, hearsay is admissible in probation revocation hearings only if the trial court finds the hearsay is “substantially trustworthy”). Therefore, expert scientific testimony in probation revocation hearings is not subject to Indiana Evidence Rule 702(b), which provides “[e]xpert scientific testimony is admissible only if the court is satisfied that the scientific principles upon which the expert testimony rests are reliable.” However, expert scientific testimony, like any evidence in probation revocation hearings, is admissible only upon some showing of reliability. See Cox, 706 N.E.2d at 551. As in a criminal trial, the reliability of expert scientific evidence may be established by judicial notice or a sufficient foundation to persuade the trial court that the relevant scientific principles are reliable. See Malinski v. State, 794 N.E.2d 1071, 1084 (Ind. 2003).

In cases governed by Rule 702(b), Indiana courts assess the reliability of expert scientific evidence by considering the factors set forth in Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993), with regard to the analogous federal evidence rule. As our supreme court has explained,

The concerns driving Daubert [interpreting Federal Rule of Evidence 702] coincide with the express requirement of Indiana Rule of Evidence 702(b) that the trial court be satisfied of the reliability of the scientific principles involved. Thus, although not binding upon the determination of state evidentiary law issues, the federal evidence law of Daubert and its progeny is helpful to the bench and bar in applying Indiana Rule of Evidence 702(b).

Steward v. State, 652 N.E.2d 490, 498 (Ind. 1995). The Daubert factors include whether the scientific theory or technique 1) can be and has been tested; 2) has been subjected to peer review and publication; 3) has a known or potential error rate; 4) is governed by maintained standards controlling its operation; and 5) has gained widespread acceptance in a relevant scientific community. 509 U.S. at 593-94; see also Burnett v. State, 815 N.E.2d 201, 206 (Ind. Ct. App. 2004) (noting this list of factors is “non-exclusive”). Although all of these factors and others may be relevant, none is by itself dispositive, and not all need be present for a trial court to find the proffered evidence rests upon reliable principles. See McGrew v. State, 682 N.E.2d 1289, 1292 (Ind. 1997) (no single “test” determines reliability under Rule 702(b)). However, the proponent of the expert scientific testimony bears the burden of persuading the trial court it is more likely than not that the scientific principles upon which the testimony rests are reliable. Burnett, 815 N.E.2d at 206. Although Rule 702(b) does not apply to probation revocation hearings, we believe the caselaw regarding Rule 702(b) and the factors articulated in Daubert are helpful to Indiana courts in determining whether expert

scientific testimony in probation revocation hearings possesses substantial indicia of reliability and is therefore properly admissible. With these principles in mind, we turn to the facts of Mogg's case.

## 2. Indicia of SCRAM System's Reliability

First, the record before the trial court established the SCRAM system both can be, and has been, tested regarding its accuracy in detecting a person's alcohol consumption. To carry its burden of persuading the trial court the evidence generated by SCRAM rests on reliable scientific principles, the State introduced three studies based on laboratory-controlled testing of the SCRAM system: one study conducted internally by AMS and two external, published studies. Although these studies tested the SCRAM I bracelet and not SCRAM II, which was subsequently developed and worn by Mogg, Hawthorne's uncontroverted testimony was that the SCRAM II bracelet uses the same technology and components as SCRAM I, and the trial court thereupon concluded the studies were relevant to the reliability of SCRAM II. Mogg points out that Hawthorne, as co-inventor of the SCRAM system and an employee of AMS, had a financial interest in his testimony offered to show the reliability of SCRAM. However, the credibility of an expert witness is a manner for determination by the trier of fact. State v. Vaughan, 243 Ind. 221, 184 N.E.2d 143, 147 (1962). Therefore, we cannot say the trial court abused its discretion in crediting Hawthorne's testimony and concluding the reliability of the SCRAM system, including SCRAM II, had been subjected to testing.

Second, the evidence established the SCRAM system and results of its testing had been subjected to peer review and publication. The Sakai study was published in an

academic journal devoted to alcoholism research, and the NHTSA study was published by a governmental body having responsibility for research related to public safety. The trial court did not err in finding the factor of peer review and publication weighed in favor of the SCRAM system's reliability.

Third, each of the studies discussed above identified an error rate for the SCRAM system that the studies' authors did not regard as problematic with respect to false positive readings. Specifically, the AMS internal study found one false positive and the Sakai study found zero false positives. The NHTSA study identified some false positives but concluded there was a greater incidence of false negatives: that is, the SCRAM system was more likely to err by not identifying a drinking event when one actually occurred than to err by registering a drinking event when the subject had not consumed alcohol. Thus, the NHTSA study supported Hawthorne's testimony that the SCRAM system is designed to err, if at all, in the wearer's favor. As Mogg points out, the AMS internal study was conducted by an entity having a financial stake in the results, and the Sakai study was funded in part by AMS. Although these facts were proper for the trial court to consider in assigning weight to the respective studies, it is well settled that on appeal we do not reweigh conflicting evidence. Smith, 889 N.E.2d at 839. As a result, the trial court did not abuse its discretion when it concluded based on the three studies that the SCRAM system had an established error rate that supported a finding of reliability.

Finally, the State presented evidence to support a finding the SCRAM system functioned properly in Mogg's case. Hawthorne testified SCRAM bracelets are calibrated

before they are shipped to the wearer, and Cook testified he properly fitted Mogg with the SCRAM II bracelet and observed the bracelet was working properly. All of this testimony was uncontroverted by Mogg, and Mogg did not present any evidence that at any time thereafter the SCRAM system ceased to function properly or that an environmental interferant may have caused or contributed to her positive TAC readings.

Mogg argues the record does not support the trial court's finding the SCRAM system was sufficiently reliable because the State failed to show "adequate peer review and a degree of acceptance in the relevant scientific community." Appellant's Brief at 2. Mogg's argument fails because not all the Daubert factors need be present to sustain a trial court's finding that expert scientific evidence is based on reliable principles. See McGrew, 682 N.E.2d at 1292. The NHTSA report acknowledged "[t]here is only a very sparse research literature directly relevant" to the SCRAM system's method of transdermal alcohol detection, tr. at 244, which would suggest SCRAM has not achieved general acceptance. In addition, the exhibits Mogg introduced before the trial court, viewed most favorably to Mogg, tended to show that the reliability of the SCRAM system is a matter of current dispute among scientific researchers and within the legal community. Accepting these facts as true for the sake of argument, it does not follow the trial court was bound to exclude the SCRAM data, because general acceptance is not a prerequisite to a finding of scientific reliability under Rule 702(b) or for purposes of a probation revocation hearing. Further, as discussed above, the Sakai study and the NHTSA study established some degree of peer review of the SCRAM system. That the degree of peer review was not adequate, in Mogg's view, on these

facts goes to the trial court's discretion in weighing the SCRAM evidence rather than to its admissibility.

For the foregoing reasons, the trial court considered the proper factors in ruling on the admissibility of the SCRAM data, and the record supported its conclusion the SCRAM data had sufficient indicia of reliability to be admissible for the purpose of proving Mogg's alcohol consumption. As a result, the trial court did not abuse its discretion in admitting the SCRAM data to establish that Mogg violated the terms of her probation.

Our conclusion in this regard is not to be read for the proposition that SCRAM data are admissible in any type of proceeding or for purposes other than to prove the subject consumed alcohol.<sup>3</sup> See Steward, 652 N.E.2d at 498 (observing that “scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes”) (quoting Daubert, 509 U.S. at 591). For example, the record in this case would not support a finding that SCRAM data are reliable for purposes of showing a person's intoxication. Moreover, we caution trial courts against admitting SCRAM data absent a sufficient foundation to show the system functioned reliably in the particular case, cf. Ind. Code § 9-30-6-5 (setting forth foundational requirements for breath alcohol tests), or upon affidavit without opportunity for cross-examination of the expert who analyzed the data and based a finding of consumption thereon. See Ind. Code § 35-38-2-3(e) (providing right of confrontation and cross-

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<sup>3</sup> We note the General Assembly has not spoken on the use of SCRAM data in judicial proceedings. Cf. P.L. 128-2008 § 11(f) (“The [Indiana criminal justice] institute shall prepare an annual report that studies the following: . . . Use in Indiana of: (A) ignition interlock systems and other alcohol monitoring systems such as SCRAM (Secure Continuous Remote Alcohol Monitor); and (B) other alcohol abuse deterrent programs.”). In In re Haynie, 894 N.E.2d 532 (Ind. 2008), our supreme court approved an attorney disciplinary agreement whereby the attorney's suspension from law practice following an OWI conviction would be stayed subject to completion of two years of probation, which

examination in probation revocation hearings). Our conclusion in this case, based as it is on the record before the trial court and expert testimony that was largely uncontroverted by Mogg, leaves for another day whether the result would be different upon a different record where the indicia of the SCRAM system's reliability were more closely disputed. Cf. State v. Lemler, 774 N.W.2d 272, 284-86 (S.D. 2009) (concluding trial court did not abuse its discretion in admitting evidence generated by SCRAM system in probation revocation hearing where Hawthorne testified regarding the system's reliability and defendant's expert did not dispute the system was based on sound scientific principles).

## II. Sufficiency of the Evidence

When reviewing the sufficiency of the evidence to support a revocation of probation, we consider only the evidence most favorable to the judgment without reweighing the evidence or judging witnesses' credibility. Woods v. State, 892 N.E.2d 637, 639 (Ind. 2008). A probation revocation hearing is civil in nature, and the State's burden is to prove the alleged violations by a preponderance of the evidence. Cox, 706 N.E.2d at 551. "If there is substantial evidence of probative value to support the trial court's conclusion that a defendant has violated any terms of probation, we will affirm its decision to revoke probation." Id.

Mogg does not dispute that if the SCRAM readings showing two alcohol consumption events were properly admitted, then sufficient evidence supports the revocation of her probation. A condition of Mogg's probation was she consume absolutely no alcohol, and as noted above, the State need only prove her consumption by a preponderance of the evidence.

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included as a condition that the attorney wear a SCRAM device.

Although Mogg denied consuming any alcohol, the trial court did not find her denial to be credible, and we will not disturb that determination on appeal. It was the trial court's responsibility to weigh the evidence against Mogg, and the trial court did not err in assigning sufficient weight to the positive SCRAM results so as to conclude the State had proven Mogg's consumption by a preponderance of the evidence. Therefore, sufficient evidence supports the trial court's finding Mogg violated the terms of her probation, and we affirm its decision.

### Conclusion

The trial court did not abuse its discretion in admitting evidence of Mogg's alcohol consumption generated by the SCRAM system. As a result, sufficient evidence supports the trial court's finding Mogg violated the terms of her probation, and the trial court's decision revoking Mogg's probation is affirmed.

Affirmed.

BAKER, C.J., and DARDEN, J., concur.