

STATE OF)		IN	CIRCUIT COURT
)	SS:		
COUNTY OF)		CAUSE NUMBER:	
STATE OF)			
)			
)	vs.		
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X)			

**MOTION IN LIMINE TO LIMIT EXPERT TESTIMONY REGARDING
BLOODSTAIN PATTERN ANALYSIS**

Now comes the defendant, by and through counsel and hereby moves this Court to issue an Order directing the government to limit the bloodstain pattern analyst’s testimony, and any references to said testimony as follows:

1. Bar the expert from testifying to any finding that is sourced in subjectivity rather than science. To be science, there must be a scientific method. Once the blood spatters were photographed and measured at the scene, the government’s analyst applied no method to the conclusions he reached. As the NAS Report makes clear, while [s]cientific studies support some aspects of bloodstain pattern analysis...some experts extrapolate far beyond what can be supported.” NAS Report at 5-39. Such is the case here. *See e.g. Coleman v. State*, 357 S.E.2d 566 (1987), the Georgia Supreme Court allowed the witness to testify to scientific findings but held the witness had overreached when he opined about a hypothetical scenario accounting for all of the blood spatters; see also, *Franco v. State*, 25 S.W. 3d 26 (Tex.App. 2000). In *Franco*, the Court concluded that even if blood spatter analysis is properly admitted to the trier of fact in some circumstances,

“we are dubious of the claim in this record that blood spatter evidence can ‘determine the aftermath of a violent incident of bloodshed and to try to determine the location of individuals before, during and after bloodshed and to try to determine, perhaps, a sequence of events that occurred based upon the bloodstain evidence available at the scene.’ *Id.* at 29.

Further, the Court found “nothing in blood spatter analysis from which any ‘expert’ could draw an opinion as to who was the initial aggressor.” *Id.* at 30.

2. Establish and enforce minimum qualifications for expert testimony on blood pattern analysis.
 - a. Bar the expert from testifying if he lacks the “minimum” requirements for “interpreting and integrating bloodstain patterns into a reconstruction,” which the NAS Report defines as:
 1. an appropriate scientific education;
 2. knowledge of the terminology employed (e.g. angle of impact, arterial spurting, back spatter, castoff pattern);
 3. an understanding of the limitations of the measurement tools used to make bloodstain pattern measurements (e.g. calculators, software, lasers, protractors);
 4. an understanding of applied mathematics and the use of significant figures;
 5. an understanding of the physics of fluid transfer;
 6. an understanding of pathology of wounds; and
 7. an understanding of the general patterns blood makes after leaving the human body. *Id.* at 5-38.

Too many so called “experts,” are one-week-wonders – the product of a forty hour general course, which is wholly inadequate to meet the complexities of the field. As the NAS Report states in Recommendation 9:

“...legitimatization of practices in forensic disciplines must be based on established scientific knowledge, principles, and practices, which are best learned through formal education. Apprenticeship has a secondary role, and under no

circumstances can it supplant the need for the scientific basis of education in and the practice of forensic science.”

- b. Bar the expert from testifying where his or her credentials are no better than those of a scientifically trained expert who disagrees with the method by which he has reached his findings. In such instances, the error rate is 50%, which is the same error rate for polygraphs – which the United States Supreme Court deemed unreliable and inadmissible in *United States v. Scheffer*, 523 U.S. 303, 310, 118 S.Ct. 1261, 140 L.Ed.2d 413 (1998). Testimony re blood spatter analysis should not be admitted where the expert acknowledges that his account was not the only possible explanation for the blood spatters at the scene. *Cf. Fox v. Ward*, 200F.3d 1286, 1297 (10th Cir. 2000).
 - c. Testimony re blood spatter analysis should not be admitted when the expert falsifies or inflates his qualifications. *Cf. Smith v. Massey*, 235 F.3d 1259 (10th Cir. 2000)(upholding the denial of habeas corpus relief although the government’s analyst gave false testimony about his training and qualifications; although the expert indicated that he took a week long course in blood spatter analysis, the instructor indicated that the course was only three days in length and insufficient to prepare an attendee to testify as an expert in court; there was no evidence that the expert knowingly provided a scientifically inaccurate analysis or that the prosecution knew of the falsity of the witness’s testimony).
3. Bar the expert from expressing an opinion as to whether a struggle took place. Such an opinion is not based on expertise in blood stain pattern analysis. Whether

the scene is consistent with a struggle is a matter of common sense freely discernible via lay observation. Expert testimony is not required.

4. Bar the expert from speculation, including, but not limited to testimony regarding what something “appeared,” or “seemed” to be. As the NAS Report notes, “many sources of variability arise with the production of bloodstain patterns and their interpretation is not nearly as straightforward as the process implies.” *Id.* at 5-38.
5. Bar the expert from stating his opinion with absolute certainty, or even a reasonable degree of scientific certainty. The expert must limit his or her claim of causation to more likely than not. There are no empirical studies supporting claims of greater certitude. The NAS Report that certain “patterns left by blood can suggest scenarios, but there are no studies to support that these “suggestions” as to causation can be proved to any degree of scientific certainty.” *Id.*
6. Bar the expert from stating that a particular stain is caused in a particular way. There is insufficient empirical data to warrant absolute statements of causation. *Id.* Indeed, as the NAS Report observed, “[b]loodstain patterns found at scenes can be complex, because although overlapping patterns may appear simple, in many cases their interpretations are difficult or impossible.” *Id.* 5-38, Citations omitted. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at p.435-6, the authors note that “The bloodstain pattern analyst must be selective about just how definitive or nondefinitive they are with their conclusions....imply[ing] a percentage of likelihood ...may not be scientifically substantiated.” See e.g. Rowe, W.F., *Errors in the Determination of the Point of Origin of Bloodstains*,

Forensic Science International, 2006. 161(1): pp. 47-51; MacDonell, H.L., *Another Confusing Bloodstain Pattern*, International Association of Bloodstain Pattern Analysts News, 2004.20(3): pp. 11-15; MacLean, B., K. Powley and D. Dahlstrom, *A Case Study Illustrating Another Logical Explanation for High Velocity Impact Spatter*, Journal of the Canadian Society of Forensic Science, 2001. 34(4): p. 191-195.

7. Bar the expert from stating that airborne blood is created solely by forceful contact such as a gunshot or a bludgeoning. Airborne blood can be created by numerous other factors including but not limited to sneezing, expiring, coughing, chest compression by EMTs. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at p.167-9, the authors note that small bloodstains produced as a result of coughing blood or expiring blood may mimic those produced by back spatter from a gunshot wound. “Numerous experiments have been conducted by individuals using their own blood to demonstrate the bloodstain patterns produced by exhalation, coughing, and sneezing blood from the nose and mouth. The results of these experiments clearly showed the similarity of size range of the individual drops within a pattern with impact spatter observed in beating, stabbing and gunshot events. Extremely fine bloodstains were easily produced. Air bubbles or bubble rings, mucous strands in the stains, or discernable diluted stains were not a frequent occurrence.” *Id.* at 167. The authors describe a case in which the government’s analyst testified that small bloodstains on the defendant’s trousers were “high velocity mist” consistent with the defendant having shot his uncle.

Defense analysts conducted experiments involving coughing and expiring blood which produced patterns that were indistinguishable from those on the defendant's trousers. As the authors concluded: [t]he case demonstrated the value of performing relevant experiments and the importance of recognizing alternative explanations for the production of small bloodstains." The defendant was acquitted – the deceased had suffered from terminal throat cancer and medical records showed that he had coughed blood.

8. Bar the expert from testifying contrary to Evidence Rule 704(b), which provides that "[w]itnesses may not testify to opinions concerning intent, guilt, or innocence in a criminal case; the truth or falsity of allegations; whether a witness has testified truthfully; or legal conclusions." If the government's analyst is allowed to testify to opinions such as that the bloodstain pattern evidence negates the defendant's claim of self defense, or shows that the defendant was the attacker, 704(b) is violated.

Allowing expert testimony that the crime scene was "staged," or that the defendant's version is wrong is essentially using expert opinion as a guise for closing argument. Experts cannot serve to simply synthesize the government's case for the jury, but must provide an opinion applying scientific or technical knowledge which is of *assistance* in—not in substitution of—fact finding. Simply put, there is no recognized methodology in characterizing the crime scene as "staged." There is no way to duplicate such a subjective "study" of the evidence.

9. Bar the expert from testifying contrary to Evid.R. 403, which excludes evidence "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, or needless presentation of cumulative evidence. Lengthy testimony regarding the location of blood droplets in the crime scene involves bombarding the jury with bloody images that do not assist them in resolving the case. It is very prejudicial to overemphasize the gore and blood in the case. *See e.g. State v. Johnson*, 576 A.2d 834 (N.J. 1990) holding that the trial judge should have barred the expert's testimony on the ground that the prejudicial character of the testimony outweighed its probative value. The court emphasized that the testimony was merely cumulative on the issues of cause of death and extent of injuries.

The court observed:

Information about the parts of the house where the attack had taken place and the directionality of the blows, although startling, proves neither the intent nor the identity of the attacker. Thus, it was only minimally probative of defendant's guilt.

From the Court's administrative perspective, allowing demonstrations of blood spatter generation presents is replete with risk of prejudice and wholly lacking in probative value. Such demonstrations creates a show-like atmosphere involving fake blood. From a legal perspective, such a practice is likely to disturb the jurors while failing to educate them on any issue critical to this case and will only serve to heighten emotions and prejudice. As the New Jersey Supreme Court found in *Johnson, supra*, the danger is greatest when there are insufficiently similar circumstances to make the demonstration a reliable representation of relevant issues:

Demonstrations and undue emphasis on blood evidence should not be allowed. As the NAS cautioned, "extra care must be given to the way in which the analyses are presented in court." *Id.* 5-39.

10. Bar the expert from testifying contrary to Evid. R. 702(a) which requires that scientific evidence is inadmissible unless the testimony will be helpful to the jury. Given the fact that the government and the defense bloodstain analyst's opinions and conclusions are diametrically opposed, the jury will be forced into the untenable position of adjudicating the validity of complex competing claims as to the propriety of an application of an unfamiliar field of forensics. Lay jurors are not qualified to make such determinations. Lay jurors are being asked to determine an extended series of questions in order to reliably rank the analyst's conclusions, including but not limited to, whether a scientific method was used, and if used, was used correctly, and if used correctly, whether the conclusions testified to are the logical result of the application of a scientific method to the facts in issue.

11. Bar the expert from interpreting blood evidence that is insufficient to meet the threshold requirement that there be a pattern. See Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at pp. 102-3:

...the term pattern refers to a *distribution* of individual spatters. It is not possible to have a distribution with a single spatter (spot). Hence a single blood spatter does not constitute a 'spatter pattern.' ...For the analyst to refer to the distribution as a spatter pattern, they must be able to identify a sufficient number of individual spatters to constitute a pattern.

See also, Herbert MacDonell, Bloodstain Patterns (1993) at p. 64: "A few bloodstains do not a pattern make."

12. Bar the expert from making distance estimates for back spatter from shootings. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul

Kish, Paulette Sutton, CRC Press (2005) at p. 148, the authors admonish:

There are instances where testimony has been given regarding what one would expect to see or what was actually observed in cases involving gunshot spatter. In one case, a pathologist testified that ‘the gun used to shoot the victim was more than two feet from her head when fired. Both wounds would have produced blood spatter although [I] couldn’t say how much.’ In the same case a forensic scientist testified that the wounds he observed in photographs ‘would have probably produced enough blood spatter to get on the shooter’s clothes.’ The issue in the case involve the absence of bloodstains (back spatter) on the clothing of the accused. **There is no valid scientific basis to relate estimates or establish probabilities for the production of impact spatter resulting from gunshot.** [Emphasis added].

13. Bar the expert from testifying that the presence of cast off blood on defendant’s clothing negates his claim that he was not the assailant. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at p.174, caution is noted in interpreting cast-off stains on the defendant’s clothing as well as the number of blows inflicted.

It is also important to remember that cast-off trails may be the result of a swing of a bloody object not related to a blow to the victim.” And, [c]ast-off bloodstains on the front of an individual’s clothing may indicate proximity to a bloodshed event rather than an actual participation in the beating or stabbing event. *Id.*, pp 174-5.

14. Bar the expert from testifying unless he can substantiate that his conclusion is the only conclusion that fits the facts. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at p.432, the authors note that

[o]n numerous occasions, the analyst will have more than one scenario that may equally fit the same set of facts. Likewise, the analyst may not be able to exclude enough possible scenarios to render a meaningful opinion as to what actually

occurred at a particular scene....If you cannot substantiate your opinion, you do not have an opinion to render.

15. Bar the expert from testifying due to the fact that as a law enforcement officer, or an examiner in a law enforcement affiliated lab, bias taints the objectivity essential to the scientific method. See NAS Report, at 6-2: “Forensic scientists who sit administratively in law enforcement agencies or prosecutors’ offices, or who are hired by those units, are subject to a general risk of bias.”
16. Bar all opinions regarding the intent of the defendant and the alleged victim. In Principles of Bloodstain Pattern Analysis, Theory and Practice, Stuart James, Paul Kish, Paulette Sutton, CRC Press (2005) at p.442, the authors note that “The types of opinions that one should *avoid* include:

1. Opinions discussing the victim’s cognitive state at the time of their injury.” Egs., the victim was sleeping, reading, was frightened, turned to avoid further injury.
2. Opinions that overstate or amplify the significance of the bloodstain patterns:

If the wrists were being held and the upper torso movement was restricted, as indicated by the bloodstain patterns, one might deduce that the assailant was twisting and rocking the blade of the knife in the victim.”

“The number and focus of the wounds, the apparent restriction of the victim by more than one person, the apparent tortuous and tortuous nature of the wounds, and the confinement of the bloodletting to a small area suggest that this act was deliberate and methodical. There are insufficient case-off patterns, spatter patterns, and ambulation in the blood to infer this to be spontaneous and/or a frenzied act. The fact that there are no readily detectable trails of blood drops or transfers from the assailants as they departed the scene would indicate extraordinary care by the assailants in cleaning themselves before departure, or an inexplicable fluke.”
3. Opinions that are not based on bloodstain pattern analysis at all:

“The wound track and the victim’s relative small physical size would greatly limit the victim’s physical capability to self-inflict such a wound.”
4. Opinions based on a speculation of what they believe should have occurred: “The gunshot wound would have created a substantial

amount of back spatter.” “The shooter would have had back spatter on their person.”

“The ultimate question an analyst must ask himself or herself on final review of any report is “Am I willing to spend the rest of my life incarcerated for the report I am about to submit.”

17. The government’s expert should be barred from testifying to any opinions and findings not contained in his report.

18. The government’s witness should not be declared or denominated as an “expert” in front of the jury in order to preclude the jury from attributing any such denomination as the court’s stamp of approval.

In filing this Motion to Limit Expert Testimony, the defendant states that he continues to object to the admission of any reference or testimony pertaining to blood stain pattern analysis as articulated in his previously filed Motion To Exclude Government’s Bloodstain Pattern Analysis.

WHEREFORE, these premises considered, the defendant prays for the relief hereinabove requested.

Respectfully submitted,

Jodie English