

LAB REPORTS AND LEGAL ISSUES SURROUNDING THEM

Dean P. Loven
Assistant Public Defender
26th Judicial District
Suite 400
700 E. Fourth St.
Charlotte, NC 28202

Dean.Loven@MecklenburgCountync.gov

704-686-0900

I. Laboratory Reports – How they get in at trial

- 1) By waiver
 - a) Lose the right to challenge admission of the laboratory report
 - b) Lose right to challenge the conclusion contained in the laboratory report
 - c) May lose right to present contrary opinion testimony concerning the conclusion contained in the laboratory report
- 2) By stipulation
 - a) Lose the right to challenge admission of the laboratory report
 - b) Depending on stipulation, may or may not lose right to challenge the conclusion contained in the laboratory report
 - c) Depending on stipulation, may or may not lose right to present contrary opinion testimony concerning conclusion contained in the laboratory report
- 3) Through testimony of expert who prepared laboratory report
 - a) Have the right to challenge the content of the laboratory report and its conclusion
 - b) Can present contrary opinion testimony
- 4) Through testimony of expert who did not prepare laboratory report
 - a) May be Confrontation Clause issues
 - b) Have the right to challenge the content of the laboratory report and its conclusion
 - c) Can present contrary opinion testimony
- 5) By defendant for use against the State in criminal cases where factual findings resulting from an investigation made pursuant to law, unless the sources of information or other circumstances indicate lack of trustworthiness. N.C. Gen. Stat. § 8C-1, Rule 803(8)

II. What is an Expert?

- 1) A witness qualified as an expert by knowledge, skill, experience, training or education
 - a) N.C. Gen. Stat. § 8C-1, Rule 702(a)
- 2) May testify if scientific, technical or other specialized knowledge will assist the trier of fact
 - a) N.C. Gen. Stat. § 8C-1, Rule 702(a)
 - b) **Note:** North Carolina is NOT a *Daubert* jurisdiction. *Howerton v. Arai Helmet, Ltd.*, 358 N.C. 440, 597 S.E.2d 674 (2004).
 - i) Admission of expert testimony is generally easier in North Carolina than under *Daubert v. Merrill Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).
- 3) May give opinion
 - a) Based upon what is perceived by or made known to him at or before the hearing. N.C. Gen. Stat. § 8C-1, Rule 703

- b) Must be of the type of information reasonably relied upon by experts in the particular field in forming opinions or inferences on the subject. N.C. Gen. Stat. § 8C-1, Rule 703
- c) The facts or data upon which the expert relies need not be admissible in evidence. N.C. Gen. Stat. § 8C-1, Rule 703
- d) May give opinion on ultimate issue. N.C. Gen. Stat. § 8C-1, Rule 704
- e) NOTE: no evidentiary requirement that witness be neutral

III. Distinction Between Lay Opinion and Expert Opinion

- 1) Lay opinion must be based upon the perception of the witness. N.C. Gen. Stat. § 8C-1, Rule 701
- 2) Must be helpful to a clear understanding of his testimony or the determination of a fact in issue. N.C. Gen. Stat. § 8C-1, Rule 701
 - a) If jury can arrive at same conclusion without the aid of the opinion, then the opinion is not helpful and therefore not relevant under N.C. Gen. Stat. § 8C-1, Rule 402
- 3) Must be foundation to show
 - a) The witness had sufficient perception to form the opinion or inference
 - b) The witness has sufficient life experience to permit making forming the opinion or inference
- 4) Remember, if person is disqualified as expert witness, he may still be qualified as a lay witness. *State v. Streckfuss*, 171 N.C. App. 81, 614 S.E.2d 323 (2005) (officer not qualified as Rule 702 expert to give opinion as to results of standardized field sobriety tests nevertheless qualified to give lay opinion as to defendant's intoxication).
 - a) *Note*: in *Streckfuss*, the testifying witness' lay opinion was based upon observations concerning intoxication not related to the standardized field sobriety tests.

IV. What Can the Expert Testify About?

- 1) When is expert opinion allowed
 - a) Is the area of testimony one for which courts have recognized the need for expert testimony, or for which such an argument can be made?
 - b) Would the expert be one who "because of his experience is in a better position to have an opinion on the subject than the trier of fact." *State v. Goode*, 341 N.C. 513, 461 S.E.2d 631 (1995).
 - c) Is the evidence the type that would be useful to the jury but is beyond the knowledge of the layman (relevant)
 - d) The *Howerton/Goode* requirements for admissibility of results based upon a given method *Howerton v. Arai Helmet, Ltd.*, 358 N.C. 440, 597 S.E.2d 674 (2004); *State v. Goode*, 341 N.C. 513, 461 S.E.2d 631 (1995)
 - i) Is the proffered method of proof reliable
 - ii) Does the witness presenting the evidence qualify as an expert in the area
 - iii) Is the evidence relevant
- 2) Common areas of expert testimony in criminal trials
 - a) Field sobriety tests
 - b) Identification of illegal substances
 - c) Fingerprint identification
 - d) DNA identification
 - e) Bullet identification

- f) Cause of death
- g) Indications of sexual or physical abuse
- 3) Basis of expert opinion
 - a) The expert may testify in terms of opinion or inference and give his reasons therefore without prior disclosure of the underlying facts or data, unless an adverse party requests otherwise, in which event the expert will be required to disclose such underlying facts or data on direct examination or voir dire before stating the opinion. N.C. Gen. Stat. § 8C-1, Rule 705
 - b) The expert may in any event be required to disclose the underlying facts or data on cross-examination. N.C. Gen. Stat. § 8C-1, Rule 705
 - c) To the extent called to the attention of an expert witness upon cross-examination or relied upon him in direct examination, statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine or other science or art, established as reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice. If admitted, the statements may be read into evidence, but may not be received as exhibits, N.C. Gen. Stat. § 8C-1 Rule 803(18)
 - d) Laboratory notebook can always be shown to testifying expert
 - i) To refresh the testifying expert's recollection as to the basis of his opinion. N.C. Gen. Stat. § 8C-1, Rule 612
 - ii) If prepared by testifying expert, to impeach with a prior inconsistent statement. N.C. Gen. Stat. § 8C-1, Rule 613
 - iii) If report contains useful information, admissible as business record pursuant to N.C. Gen. Stat. § 8C-1, Rule 803(6)
 - iv) Against the State in criminal actions if factual findings resulting from an investigation made pursuant to authority granted by law, unless the sources of information or other circumstances indicate lack of trustworthiness. N.C. Gen. Stat. § 8C-1, Rule 803(8)

V. Defense Experts

- 4) Why do you want an expert?
 - a) To explain to you what is going on
 - b) To conduct independent testing
 - i) Of items previously analyzed
 - (1) Independent analysis for DNA on sample where DNA previously analyzed, such as rape kit.
 - ii) Of items not previously analyzed
 - (1) Example: DNA analysis of evidentiary samples not previously tested
 - iii) And state cannot call your nontestifying expert to testify about the result. *State v. Dunn*, 154 N.C. 1, 571 S.E.2d 650 (2002).
 - c) To attack the State's expert testimony either through assisting with questioning or by testimony
 - d) To advise client
 - i) Example – 2d degree murder based upon automobile accident and DUI
 - (1) Accident reconstruction expert
 - (2) Cardiologist and endocrinologist to review if client's medical condition may have caused him to black out
 - e) To present an affirmative defense or sentencing factor

- i) Psychologist for PTSD defense
 - ii) May include mitigation specialist to show factors that do not rise to a defense, but may reduce sentence
- 5) Does the testimony call for a Rule 701 lay opinion or a Rule 702 expert opinion?
 - a) Rule 701- reasonable inferences based upon the perception of the witness
 - b) Rule 702 expert
 - i) Can give opinion
 - ii) Does not have to have observed events in question
 - iii) Is subject to cross examination from learned treatises
- 6) Motion for appointment of expert
 - a) Request must be for specific type of expert. *See, e.g., State v. Johnson*, 317 N.C. 193, 344 S.E.2d 775 (1986) (trial court did not err in denying general request for “medical expert” to review medical records, autopsy reports, and scientific data).
 - b) A blunderbuss request for several experts is unlikely to succeed. *See, e.g., State v. Mills*, 332 N.C. 392, 420 S.E.2d 114 (1992)(upholding denial of motion for experts in psychiatry, forensic serology, DNA identification testing, forensic chemistry, statistics, genetics, metallurgy, pathology, private investigation, and canine tracking).
 - c) State with specificity assistance the expert is expected to provide. *Compare, e.g., State v. Parks*, 331 N.C. 649, 417 S.E.2d 467 (1992) (trial court erred in denying motion for psychiatric assistance where defendant intended to raise insanity defense and needed psychiatrist to evaluate his condition, testify at trial, and counter opinion of state’s expert) *with State v. Wilson*, 322 N.C. 117, 367 S.E.2d 589 (1988) (motion properly denied where defendant indicated only that assistance of psychologist might be helpful to him in preparing his defense).
 - d) State why expert is necessary. *See generally State v. Jones*, 344 N.C. 722, 477 S.E.2d 147, 149 (1996) (“court should consider all the facts and circumstances known to it at the time the motion” is made). The following are possible factors to consider:
 - i) Identifying the issues that you intend to pursue and that you need expert assistance to develop. To the extent then available, provide specific facts supporting your position on those issues. *See, e.g., Parks*, 331 N.C. 649, 417 S.E.2d 467 (court found persuasive the nine circumstances provided in support of request, including previous diagnosis of defendant and counsel’s own observations of and conversations with defendant).
 - ii) The significance of the issues. *See, e.g., State v. Jones*, 344 N.C. 722, 477 S.E.2d 147 (1996) (defendant entitled to psychiatric expert because only possible defense to charges was mental health defense); *State v. Moore*, 321 N.C. 327, 364 S.E.2d 648 (1988) (defendant entitled to fingerprint expert where contested palm print was only physical evidence connecting defendant to crime scene).
 - iii) Deal with contrary findings by the State’s experts.
 - (1) If the State already has conducted an analysis, explain what a defense expert may be able to add, weaknesses in the State’s analysis or that the State’s expert is not neutral *see State v. Moore*, 321 N.C. 327, 364 S.E.2d 648 (1988),
 - (2) note whether the State’s expert agreed to be interviewed by you, and whether the State’s expert was uncooperative with you.
 - (3) indicate whether you have obtained and reviewed all relevant information from the State concerning the evidence.

- iv) Explain why you cannot perform the tasks with existing resources and why you require special expertise or assistance, unless the point is self-evident. *See, e.g., State v. Kilpatrick*, 343 N.C. 466, 471 S.E.2d 624 (1996) (defense failed to present any specific evidence or argument on why counsel needed assistance of jury selection expert in conducting *voir dire*).
- v) Provide additional documentation
 - (1) Affidavits of counsel and prospective experts
 - (2) Information obtained through discovery,
 - (3) Scientific articles, etc.
- e) Always request *ex parte* hearing to afford effective assistance of counsel claim arising from disclosure of confidential information.
- 7) Other possible pretrial requests for experts
 - a) Performance of additional tests/evaluations
- 8) Disclosure of underlying basis for opinion you reasonably believe expert will give.

VI. Waiving the Need for an Expert - Notice and Discovery Motions

- 1) Waiver of need for State to use expert to introduce test results
 - a) Failure to object to use of affidavit probably waives right to use expert to challenge results of test
 - i) testimony is no longer relevant
 - b) Failure of State to follow notice requirements should result in exclusion of affidavits concerning the results of these tests
 - i) And if no notice was given that expert would testify, may result in exclusion of State's expert testimony at trial
 - c) Specific notice and waiver statutes – apply in district and superior court
 - i) DNA evidence. N.C. Gen. Stat. § 8-58.20
 - ii) Alcohol or other impairing substance in blood in implied consent case. N.C. Gen. Stat. § 20-139.1
 - iii) Controlled substances. N.C. Gen. Stat. § 90-95(g)
- 2) Statutory Discovery - N.C. Gen. Stat. § 15A-901 *et seq.*
 - a) Scope of covered cases
 - i) Applies only to cases within the original jurisdiction of superior court
 - ii) Applies only if there is a discovery request or agreement.
 - b) Scope of covered material
 - i) Applies to all information in possession of law enforcement or prosecutorial agency. N.C. Gen. Stat. § 15A-903(a)(1)
 - (1) Prosecutorial agency is defined to include any public or private entity that obtains information on behalf of a law enforcement agency or prosecutor in connection with the investigation of the crimes committed or the prosecution of the defendant.
 - ii) Applies to results of tests or examinations. N.C. Gen. Stat. § 15A-903(a)(1)
 - c) Discovery of State's expert testimony N.C. Gen. Stat. § 15A-903(a)(2)
 - i) A list of expert witnesses it reasonably expects to testify
 - ii) A report of any examinations or tests conducted by the expert
 - iii) The expert's curriculum vitae
 - iv) The expert's opinion

- v) The basis of the expert opinion
- d) Independent testing of material. N.C. Gen. Stat. § 15A-903(a)(1)
- 3) Reciprocal discovery N.C. Gen. Stat. § 15A-905
 - a) Failure to comply may lead to exclusion of your expert testimony evidence at trial N.C. Gen. Stat. § 15A-910
 - b) Covered material
 - i) Reports of examinations and tests which the defendant reasonably expects to introduce at trial
 - ii) Expert testimony N.C. Gen. Stat. §15A-905(c)(2)
 - (1) a list of expert witnesses it reasonably expects to testify
 - (2) A report of any examinations or tests conducted by the expert
 - (3) The expert's curriculum vitae
 - (4) The expert's opinion
 - (5) The basis of the expert opinion
 - c) Affirmative defenses N.C. Gen. Stat. § 15A-905(c)(1)
 - i) Notice may affect need to have expert on ground of relevancy
 - ii) Specific ones for which notice must be given and an expert may be useful
 - (1) Duress
 - (2) Insanity
 - (3) Diminished capacity
 - (4) Self defense
 - (5) Automatism
 - (6) Involuntary intoxication
 - (7) Voluntary intoxication
 - iii) For duress, insanity, automatism, involuntary intoxication, must give specific information as to the nature and extent of the defense. N.C. Gen. Stat. § 15A-905(c)(1)b.
- 4) Notice of Defense of insanity N.C. Gen. Stat. § 15A-959 (district and superior court)
 - a) Must give notice of defense and expert

VII. Keeping out Expert Testimony Through Motions *In Limine*

- 1) Motion for sanctions for discovery violations pursuant to N.C. Gen. Stat. § 15A-910
- 2) Exclusion for failure to give statutory notice
 - a) Practice pointer - best not to do at this time, as it gives the State the opportunity to bring the expert in
 - i) Although N.C. Gen. Stat. §§ 15A-905 and 15A-910 would allow the Court to exclude expert testimony if expert not disclosed in a reasonable time before trial, the trial court will often find that any such error is harmless if any degree of advance notice is given
- 3) Suppression for destruction of evidence before independent testing could be performed
 - a) Failure to preserve evidence, including destruction of all of evidentiary sample during testing by the State. *Arizona v. Youngblood*, 488 U.S. 51, 102 L.Ed. 2d 281 (1988); *State v. Hunt*, 345 N.C. 720, 483 S.E.2d 417 (1997).
- 4) Motion to exclude proffered expert under N.C. Gen. Stat. § 8C-1Rule 702
 - a) Covered in section on *voir dire* questioning
 - b) Practice pointer –best to wait until *voir dire* so that jeopardy attaches

- c) Is the proffered witness qualified as an expert in the area about which the witness will be testifying.
 - i) Remember – if personal observations, N.C. Gen. Stat. § 8C-1, Rule 701 may still apply even if not a Rule 702 expert.
- 5) To exclude testimony on given area of testing in general
 - a) Does testimony meet *Howerton* standard
- 6) To exclude testimony based upon given result obtain from testing in this case

VIII. Voir Dire – Motions to Exclude Testimony During Trial

- 1) Is proffered testimony topic for expert testimony
 - a) The *Howerton/Goode* requirements for admissibility of results based upon a given method *State v. Goode*, 341 N.C. 513 (1995)
 - i) Is the proffered method of proof reliable
 - ii) Does the witness presenting the evidence qualify as an expert in the area
 - iii) Is the evidence relevant
 - b) Cannot be mere speculation or opinion
 - i) Testimony concerning child sexual abuse absent physical evidence of abuse and based solely on the statement of the victim that she had been abused inadmissible opinion as to the truthfulness of the victim as opposed to an expert opinion. *State v. Grove*, 142 N.C. App. 411, 543 S.E.2d 179 (2001).
 - c) Certain areas of expert testimony not allowed as a matter of law.
 - i) Identification of pills by comparison to Micromedix where a detailed chemical description of compounds is listed in the statutes and a different punishment is listed for counterfeit substances requires chemical identification. *State v. Ward*, 364 N.C. 133, 694 S.E.2d 738 (2010).
 - ii) Visual identification of powder cocaine *Llamas-Hernandez* 363 N.C. 8 (2009) (lay opinion that powder was cocaine improperly admitted. No preliminary tests or testimony on distinguishing characteristics (taste, texture, etc.) were presented at trial. Powder cocaine does not possess unique visual characteristics, and the statute criminalizing its possession uses a scientific, technical definition of cocaine and a statutory procedure for introducing the results of testing).
 - (1) cf *State v. Davis*, 688 S.E.2d 829 (N.C. App. 2010) (officer testified based upon training and experience that crack cocaine has a distinctive color, texture and appearance allowing lay opinion as to the identity of the substance)
 - (2) Probably not subject to judicial notice as to nature or effect of drugs is not common knowledge. See, e.g., *White v. State*, 316 N.E. 699 (Ind. App. 1974), *Commonwealth v. Hartman*, 534 N.E. 1170 (Mass. 1989)
 - (3) Marijuana may be different. *State v. Fletcher*, 92 N.C. App. 50 (1988) also *Ward* – alternate means of verification can scientifically established – this might include smell.
 - iii) Polygraph – inherently unreliable. *State v. Grier*, 307 N.C. 628, 300 S.E.2d 351 (1983)
 - iv) Penile plethysmograph. *State v. Spencer*, 199 N.C. App. 662, 459 S.E.2d 812 (1995).
 - v) Presumptive tests alone
 - (1) Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) Recommendations at www.swgdrug.org/approved.htm, PDF download, page 19,

concludes colorimetric (Maquis test), fluorometric spectroscopy (Nartest), immunoassay, or melting point tests have low discriminating power and should not be used to identify controlled substances as a single test, but only in combination with at least one other discriminating techniques such as gas chromatography plus a second third procedure such as thin layer chromatography.

- (a) The National Research Council, *Strengthening Forensic Sciences in the United States – A Path Forward* (2009), pp. 134-5, recognizes the use of a presumptive test as a field test.
- (2) For marijuana, the microscopic identification of the biological features of the substance in addition to colorimetric tests will suffice.
 - (a) The NRC report, pg. 135, recommends presumptive color test, followed by low-powered microscopic identification, followed by thin layer chromatography.
- (3) Alco-sensor, as fuel cell technology can detect compounds other than ethanol
N.C. Gen. Stat. § 20-16.3(d)(2).
- (4) Marquis test (presumptive test for opiates) - looks for color change, but subject to false positive from legal compounds. While allowed to establish probable cause, the method is not so common that a law enforcement officer can testify as a lay witness with respect to the reaction. *State v. Powell*, 11 N.C. App. 465 (1971). However, the fact that it is only a presumptive test should raise question as to whether expert can rely upon the result for identification of an illegal substance. *But compare State v. Dunn*, 154 N.C. App. 1, 571 S.E.2d 650 (2002) (officer testified Marquis test detects heroin, marijuana, and cocaine).
 - (a) and compare to link from Wikipedia website for Marquis test to <http://www.ncjrs.gov/pdffiles1/nij/183258.pdf>, Color Test reagents/Kits for Preliminary Identification of Drugs of Abuse, National Institute of Justice Standard 0604.01, 2000, stating test is preliminary test
 - (i) pg 14 indicates that all kits should contain “[a] statement that the kit is intended for presumptive identification purposes only, and that all substances tested should be subjected to more definitive examination by qualified scientists in a properly equipped crime laboratory.”
 - (ii) pg 14 discusses sensitivity determination
- d) Is the expert in a better position than a layman to reach conclusion
 - i) Psychological effects of being incarcerated for a long period of time. *State v. Braxton*, 352 N.C. 158, 531 S.E.2d 428 (2000).
 - ii) Eyewitness identification expert where other witnesses corroborate the identification, there is additional evidence, and a particularized showing has not been made. *State v. Abraham*, 338 N.C. 315, 451 S.E.2d 131 (2004).
 - iii) Identification of pills by comparison to Micromedix – proffered expert in no better position than juror to make comparison. *State v. Ward*, 364 N.C. 133, 694 S.E.2d 738 (2010).
- 2) Qualifications of the proffered expert
 - a) Qualifications for expert
 - i) HGN and DRE expert defined by N.C. Gen. Stat. § 8C-702(a1)
 - (1) but in appropriate case, this may violate separation of powers where the qualifications of the expert are genuinely in question.

- b) Opinion based upon specialized training are expert testimony *State v. Streckfuss*, 171 N.C. App. 81 (2005) (deputy not qualified as expert in FST properly permitted to testify as a lay witness, based on defendant's performance of a field sobriety test, that he had formed an opinion that defendant was impaired)
- 3) Motions attacking the methodology in general
 - a) Generally not sustained if method already accepted and no new evidence to call methodology into question. *Howerton v. Arai Helmet, Ltd.*, 358 N.C. 440, 597 S.E.2d 674 (2004).
 - b) Some testimony is clearly subject to such an attack regardless of prior court decisions.
 - i) *State v. Thibodeaux*, 352 N.C. 570, 532 S.E.2d 797 (2000) (testimony of expert that Phenolphthalein is test for human blood, although part of listed statement of the facts, clearly erroneous as matter of science). *See also State v. Workman*, 344 N.C. 482 N.C. 482, 476 S.E.2d 301 (1996) (same for phenolphthalein and luminol). *Compare to State v. Moseley*, 336 N.C. 710, 445 S.E.2d 906 (1994) (phenolphthalein result was indicative of blood, but insufficient sample to definitively test for blood; witness allowed to testify as to transfer of blood from victim to defendant's clothes).
 - c) For new method not previously accepted in North Carolina
 - i) Is the method reliable (not is it widely accepted) *State v. Pennington*, 327 N.C. 89 (1990)
 - ii) *State v. Meadows*, 687 S.E.2d 305 (N.C. App. 2010) (testimony concerning results obtained with NarTest not admissible where there was no evidence procedure was reliable, the methodology used, or that the machine used an established technique or whether it was recognized by experts in the field. Only other evidence that substance was crack cocaine was visual identification).
 - d) If you want to attack method, present your own expert testimony on *voir dire*
- 4) Motions attacking the results of tests performed in this case
 - a) If your expert says the test was not performed properly, present your own expert testimony on *voir dire*.
 - b) Failure to follow NHSTA procedure – testimony *State v. Streckfuss*, 171 N.C. App. 81 (2005) - officer who could not show he had properly administered FST could not testify as to their results, but could give lay opinion
- 5) Motions based upon Confrontation Clause
 - a) Did testifying expert make independent evaluation of information, or merely recite the facts
 - i) Practice pointer – if there is a potential confrontation clause issue, limit examination to assure expert does not independently review evidence and arrive at an independent conclusion.
 - ii) Practice pointer – do not disclose confrontation clause issue until you absolutely have to (preferably by way of objection when witness starts to testify), because their expert may reach an independent conclusion if there is time to review the evidence.
 - b) Current status of the law
 - i) *State v. Locklear*, 363 N.C. 438 (2009) (medical examiner reading into record report of forensic pathologist and dentist violated confrontation clause; court considered unavailability of witnesses and lack of prior opportunity to cross-examine them)

- ii) *State v. Galindo*, 683 S.E.2d 785 (N.C. App. 2009) (crime laboratory supervisor testifying as to weight of cocaine based upon report by laboratory analysis violated confrontation clause where State failed to show analyst was not available to testify)
- iii) *State v. Mobley*, 684 S.E.2d 508 (N.C. App. 2009) (expert opinion based upon independent review and confirmation of DNA analysis did not violate confrontation clause; laboratory report was basis of expert opinion and not admitted for the truth of the matter asserted).
- iv) *State v. Hough*, 690 S.E.2d 285 (2009) (no confrontation clause error where substitute analyst based opinion on independent review and confirmation of test results)
- v) *State v. Brennan*, 692 S.E.2d 427 (N.C. App. 2009), *stay granted*, 364 N.C. 242 (2010) (analyst testifying based upon peer review of the report of another that residue was cocaine violated confrontation clause where testimony was mere recitation of the testing agent's report; although witness was qualified as expert and normal procedure for testing a suspect controlled substance, witness had seen the substance before testifying, and expert opinion as to what it was no more reliable than lay opinion based upon visual inspection of powder)
- vi) *State v. Brewington*, 693 S.E.2d 182 (N.C. App. 2010) (analyst was familiar with testing procedure used in laboratory of non-testifying analyst, but was unable to testify as to the results of presumptive tests and a crystal test, but no evidence as to results of GC/MS testing).
- c) What about the statements upon which the expert relies?
 - i) If child sex expert testifies based upon examination of child, must child be subject to cross examination?
 - ii) If statements are otherwise inadmissible on constitutional or statutory grounds, may the expert still rely upon them and testify about his or her conclusion based upon these observations if there is no confrontation of the hearsay declarant?
- 6) Attack upon opinion reached by expert
 - a) Testifying expert may base opinion on test performed by another, even if the result is not otherwise admissible, if the tests are reasonably relied upon by an expert in the field. *State v. Fair*, 354 N.C. 131, 557 S.E.2d 500 (2001).
 - b) If expert relied upon tests that did not follow accepted procedure, is the result such that expert testimony should be allowed.
 - i) Did the expert rely upon established techniques. *State v. Goode*, 341 N.C. 513, 461 S.E.2d 631 (1995)
 - ii) But once the testimony is admitted, the question of the sufficiency as to the factual basis for the expert opinion goes to the credibility of the opinion and not its competency as evidence. *Martishius v. Carolco Studios, Inc.*, 142 N.C. App. 216, 542 S.E.2d 317 (2001).
 - iii) However, if the conclusion is based upon obviously inadequate data, or facts that are unsupported or contradicted by the evidence, or the probative value of the evidence is outweighed by the risk of misleading the jury, then the evidence should be excluded as a matter of law. *Trapp v. Maccioli*, 129 N.C. App. 237, 497 S.E. 708 (1998),
- 7) Attacks on presentation of evidence by expert
 - a) The use of visual aids to assist the jury in an independent determination is one factor to consider for admission of expert testimony *State v. Goode* 341 N.C. 513, 461 S.E.2d 631 (1995)

- 8) Lay opinion – move to exclude where
 - a) Witness did not observe event
 - b) Witness does not have experience necessary to reach conclusion.
 - i) Young child may not have knowledge to say someone was intoxicated

IX. Cross Examination of State's Expert

- 1) While these generally do not have to be in writing, it may be necessary to make oral motion during trial to have evidence introduced at trial.
- 2) Motion pursuant to Rule 705 underlying basis of expert's opinion
 - a) In superior court, basis should be revealed by discovery, but this does not require that the basis actually be revealed in court unless requested by one of the parties.
 - b) Includes impeachment with evidence and expert conclusions with which the testifying expert either does not agree with or did not consider. *State v. Allen*, 322 N.C. 176, 367 S.E.2d 626 (1988); *State v. Simpson*, 341 N.C. 316, 462 S.E.2d 191 (1995).
- 3) Rule 803(18) – learned treatise if so established by the testimony or admission of the witness or by other expert testimony or judicial notice. May read into evidence, but not received into evidence.
 - a) Judicial notice that document is learned treatise can be done through Rule 201 motion
 - b) No requirement for disclosure pretrial.

X. Some Pitfalls to Avoid at Trial

- 1) Chain of custody, contamination and use of improper techniques are always issues that can be raised, but generally go to the weight of the evidence. *State v. Penington*, 327 N.C. 89, 393 S.E.2d 847 (1990)
 - a) However, the bald assertion that there was an error in the particular test opens the door to the State arguing that the defendant failed to present any evidence to that effect. *State v. Mason*, 317 N.C. 283, 345 S.E.2d 195 (1986)
 - b) Defense expert cannot testify that laboratory errors could have resulted in an erroneous conclusion if the expert has no basis for making such an assertion. N.C. Gen. Stat. § 8C-1, Rule 705.
 - c) The burden is on the defendant to present specific evidence that an analysis is not reliable. *State v. McKenzie*, 122 N.C. App. 37, 468 S.E.2d 817 (1996).
 - d) Failure to perform additional tests is arguably admission by conduct that the original test is valid or that any contrary statement by the defense expert is unfounded. *State v. Small*, 301 N.C. 407, 272 S.E.2d 128 (1980).

XI. Expert Testimony in Drug Trials

- 1) Visual identification of controlled substance
 - a) *State v. Ward*, 364 N.C. 133 (2010) Rule 702 did not permit State expert to make visual comparison of evidentiary sample to drugs contain in the Micromedex literature because the legislature imposed penalties for counterfeit and illegal drugs and the testimony of the witness focused on seriousness of charge and not reliability of method, and visual identification alone without scientifically valid chemical analysis is required unless it is established that the alternate method is sufficiently reliable. Officer had no specialized training, and no evidence was presented he could distinguish between genuine and counterfeit prescription drugs.

- b) *State v. Davis*, 688 S.E.2d 829 (N.C. App. 2010) (officer testified based upon training and experience that crack cocaine has a distinctive color, texture and appearance allowing lay opinion as to the identity of the substance)
 - c) *State v. Llamas-Hernandez*, 363 N.C. 8 (2009) (lay opinion that powder was cocaine improperly admitted. No preliminary tests, no testimony on distinguishing characteristics (taste, texture, etc.). powder cocaine does not possess unique visual characteristics, and the statute criminalizing its possession uses a scientific, technical definition of cocaine and a statutory procedure for introducing the results of testing).
 - d) *State v. Meadows*, 687 S.E.2d 305 (N.C. App. 2010) *s* appears to overrule *State v. Freeman*, 185 N.C. App. 408 (2007) – can testify that substance is crack cocaine based upon visual inspection as lay opinion.
 - e) No apparent distinction between expert and lay opinion *Meadows* and *Llamas-Hernandez* lay, *Meadows* expert
 - f) Marijuana may be different. *State v. Fletcher*, 92 N.C. App. 50 (1988) also *Ward* – alternate means of verification can scientifically established – this might include smell.
 - g) Probably not subject to judicial notice as to nature of effect of drugs if not common knowledge. See, e.g., *White v. State*, 316 N.E. 699 (Ind. App. 1974, *Commonwealth v. Hartman*, 534 N.E. 1170 (Mass. 1989))
- 2) NarTest
- a) *State v. Meadows*, 687 S.E.2d 305 (N.C. App. 2010) (testimony concerning results obtained with NarTest not admissible where there was no evidence procedure was reliable, the methodology used, or that the machine used an established technique or whether it was recognized by experts in the field. not valid procedure. Only other evidence that substance was crack cocaine was visual identification).
- 3) Presumptive tests
- a) Not discriminating definitive, and therefore not admissible for any purpose except PC (alco-sensor - fuel cell measure alcohol plus other compounds - maximum possible amount of alcohol is the presumptive test result) See *State v. Ford*, 164 N.C. App. 566 (2004) (N.C. Gen. Stat. § 20-16.2(d) only allows admission of alco-sensor reading to establish probable cause or to show evidence defendant was subject to impairing substance other than alcohol).lkj
 - b) Marquis test recognized as presumptive test for PC, but not in such common use as to be admissible at trial. *State v. Powell*, 11 N.C. App. 465 (1971).
 - c) Duquenois-Levine color test for marijuana not shown to be scientifically reliable or accurate for admission at trial where test shown to give a positive reaction for some forms of coffee, as well as aspirin. *State v. Tate*, 300 N.C. 180, 265 S.E.2d 223 (1980).
 - d) Presumptive medical urine test for urine cannabinoids, a metabolite of marijuana, that was for medical screening and not established sufficient for forensic determination insufficient to establish impairment where no numeric value for amount of metabolite was generated and no forensically accepted confirmatory tests were performed *Moore v. Sullbark Builders*, 198 N.C. App. 621, 680 S.E.2d 732 (2009)

XII. Ideal Testimony on GC/MS Results

- 1) Recognized as gold standard for drug analysis by NRC and SWGDRUG
- 2) GC/MS
 - a) Background – Gas Chromatography

- i) Solid state gas chromatography developed by Fritz Prior working under Erika Cremer in 1947. Archer John Port Martin developed liquid-gas chromatography in 1950, and was awarded the Nobel Prize for Chemistry in 1952.
- ii) Can be used to purify compounds in a mixture
- iii) Method
 - (1) The test compound is adhered to a stationary phase. An inert gas in the mobile phase passes over the stationary phase.
 - (2) The stationary phase is heated in a controlled and reproducible manner.
 - (3) The retention time of the substance on the stationary phase depends upon the temperature at which the compound vaporizes, or boils off the solid phase.
 - (4) Can detect the retention time using various electronic detectors.
- b) Background – mass spectroscopy
 - i) Wilhelm Wein laid the foundations for the method, but Sir Joseph John Thompson perfected the technique. Both were awarded Nobel prizes in physics, but Thompson won his before his work on mass spectroscopy. Francis William Aston won the 1922 Nobel Prize in chemistry for his work on mass spectroscopy. The Nobel Prize was awarded to others for their work on mass spectroscopy, including Hans Dehmelt and Wolfgang Paul (Physics in 1989), John Fenn and Koichi Tanaka (Chemistry 2002)
 - ii) Basis of the testing procedure
 - (1) Compound is vaporized
 - (2) Compound is broken into ionized components
 - (3) The ions are separated according to their mass to charge ratio by an electromagnetic field
 - (a) A quadropole mass filter is used to gurantee that only ions of a certain range of mass and charge are analyzed
 - (4) The compounds with similar structure also separate based upon the weight of the various isotopes present
 - (5) The amount of each type of ion is quantitated by a detector
 - (6) The spectrum is compared against spectrum of known compounds in a library
- 3) Expert who did not perform the analysis can review and testify to the following
 - a) The temperature at which the substance boiled off according to the report (also visual aid)
 - b) Personal knowledge of the boiling point for the controlled substance
 - c) The mass spectra of the evidentiary sample (also visual aid)
 - d) The mass spectra of the reference sample for the controlled substance (also visual aid)
 - e) The spectra from a sample blank (also visual aid)
- 4) The expert can testify based upon review of results knowledge as to
 - a) The effect of the temperature on the GC being off (result would be the controlled substance would not be detected)
 - b) The detection threshold of the machine (is there a possibility of contamination)
 - c) The result with a blank (absence of contamination)
 - d) Whether the control and reference samples represent the same substance
- 5) Questions as to was the test run properly go to weight, not admissibility
 - a) And may open the door to evidence that test was not done properly
 - b) And why defendand did not conduct second test

XIII. Hot Issues

- 1) SBI laboratory
- 2) Confrontation Clause
 - a) Need to bring evidence to court
- 3) Expert testimony based upon improper procedures
 - a) Weight vs. admissibility
- 4) Admissibility of presumptive tests that give negative results

XIV. Sample Motions

- 1) Motion to Disclose Specific Information
- 2) Motion to Appoint DNA Expert
- 3) Motion to Disclose *Brady* Material
- 4) Motion to Exclude Expert Testimony Following *Voir Dire*
- 5) Motion to Strike Evidence of Drug Analysis Performed by Charlotte Mecklenburg Police Department Crime Laboratory

XV. Dealing with Expert Testimony on the Cheap

- 1) Online - Wikipedia, good start for background information
- 2) Google – under advanced options, go to more button and hit scholar
- 3) www.ncbi.nlm.nih.gov/pubmed or www.pubmed.gov online medical review regular search for articles.
- 4) Through your local library website all NC counties have access to NCLive.org
 - a) In Mecklenburg county, log on using your user ID to library website
 - i) Click research/homework button
 - ii) Select NC Live.
 - iii) Select Academic Search Preview
 - (1) Select type of articles
 - (2) Search options – peer reviewed, Articles
 - iv) Also gives list of where article is cited
 - v) Can use Boolean search strategy
- 5) Best to use all three – Pubmed appears to be more comprehensive in medical areas, but NC live covers areas outside of medicine. Search of alcohol or ethanol and “retrograde extrapolation”
 - a) Google scholar gave 71 hits
 - b) Pubmed gave 3 hits
 - c) Academic search gave 1 hit
- 6) Online research at university library
 - a) Due to copyright limitations, not generally available to users off campus unless authorized users (students, faculty, etc.)
- 7) Is article peer reviewed and by whom? – get from journal or publisher’s homepage
- 8) Getting copy of article (other than abstract)
 - a) University library
 - b) Public library through interlibrary loan request for borrower (will be charge)
 - c) Buy directly from publisher’s website (probably most expensive, but fastest way to get the article)
- 9) Use of publications in court – copyright issues

- a) The “fair use” doctrine, as codified in 17 U.S.C. § 107, forecloses any claim of copyright infringement, either against for providing the above excerpts in discovery or against the plaintiff for using the excerpts in this litigation.
- b) That such use of copyrighted materials in litigation is protected from claims of copyright infringement is beyond serious dispute. *Shell v. Devries*, 2007 WL 4269047 (10th Cir. 2007); *Religious Technology Center v. Wollersheim*, 971 F.2d 364 (9th Cir. 1992). In *Religious Technology Center*, the copyrighted documents were used “by expert witnesses for the purpose of preparing their testimony in the state tort litigation,” 971 F.2d at 376. “[W]orks are customarily reproduced in various types of judicial proceedings, including obscenity and defamation actions ... and it seems inconceivable that any court would hold such reproduction to constitute infringement either by the government or by the individual parties responsible for offering the work in evidence.” *Id.* (quoting Nimmer on Copyright § 13.05 [D] at 13-91 (1991)).

XVI. Resources

- 1) www.ncaj.com criminal defense section site, online trial notebook, section M, list of experts (outdated, but a start)
 - a) NCAJ criminal defense section listserve is excellent place to get information on experts
- 2) www.ncids.org
 - a) training materials link, go to experts
 - b) reference manual go to defender manual, Ch. 5: Experts and Other Assistance
 - c) motions bank go to trial motions
 - d) Indigent Defense Services Forensic Resource Counsel Sarah H. Rackley Ph: (919) 560-3380; Email: Sarah.H.Rackley@nccourts.org
- 3) some sources to locate experts
 - a) other criminal lawyers
 - i) Center for Death Penalty Litigation (in Durham);
 - ii) Prisoners Legal Services (in Raleigh)
 - iii) National Association of Criminal Defense Lawyers, Washington, D.C.
 - iv) National Legal Aid & Defender Association, Washington, D.C.
 - v) Local Universities and medical providers
 - vi) Professional societies
 - vii) professional journal authors