Expert Witnesses
and Capital Cases

Professor Steve Friedland, J.D., LL.M., J.S.D.

North Carolina Judicial Conference
May 29, 2024

1

Today's Presentation

- 1. Evidence Overview
- 2. Experts Overview
- 3. Capital Case Issues

2

The Evidence Highway

3

THE EVIDENCE HIGHWAY

Gas Qs:
1. Crim/Civil?
2. Party Offering?
3. Form?

Relevant to what?

To Impeach?
Attack-Witness-Truth-Accuracy

Intrinsic
Extrinsic
Rehabilitation

To Prove Element?
Relevant
Character
Opinion
Hearsay
Privilege
Witnesses
Writings

GOAL: IN EVIDENCE

4

NC Rule 702. Testimony by experts.

- (a) If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion, or otherwise, if all of the following apply:
- (1) The testimony is based upon sufficient facts or data.
- (2) The testimony is the product of reliable principles and methods.
- (3) The witness has applied the principles and methods reliably to the facts of the case.

5

NC Rule 104. Preliminary questions

- (a) **Questions of admissibility generally**. – Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.
- (b) Relevancy conditioned on fact. –…, the court shall admit it upon, or subject to, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.
- (e) Weight and credibility. – This rule does not limit the right of a party to introduce before the jury evidence relevant to weight or credibility. (1983, ch. 701, s. 1.)

6

New FRE 702

- A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if **the proponent has demonstrated by a preponderance of the evidence that**:
- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the [expert has reliably applied] **expert's opinion reflects a reliable application of** the principles and methods to the facts of the case.

7

A FOUR POINT FRAMEWORK FOR EXPERTS

1. Reliable Theory
2. Reliable Application of Theory
3. Helpfulness to trier of fact
4. Qualified Witness

8

What is Reliable Theory? Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993)

- It is the trial court's responsibility under Rule 104(a) to determine if:
- (1) an expert is proposing to testify to scientific or other knowledge
- (2) that will assist the trial of fact in understanding a fact in issue.
- *Daubert* gives us 4 Rs for expert testimony –
- Relevant, Reliable, Reviewable, Refutable

9

The Trilogy of *Daubert, Joiner, & Kumho Tire*

- 1. *General Electric Co. v. Joiner*, 522 US 136 (1997)
- *Daubert* applies to all testimony under an abuse of discretion standard, is a flexible approach, and no deference should be given to the *ipse dixit* of the expert.

- *2. Kumho Tire v. Carmichael, 526 U.S. 137 (1999)*
- *Daubert*'s holding about the trial judge's "gatekeeping" role applies to testimony based on "scientific," "technical" and "other specialized" knowledge.

10

Daubert Factors

1. 1. Whether a theory or technique can be (and has been) *tested*
2. 2. Whether the theory or technique has been subjected to *peer review and publication*.
3. *The known or potential rate of error*
4. The existence/maintenance of standards.
5. Whether the theory or techniques *generally accepted* as reliable in the relevant scientific community.

11

Additional Factors

- (1) Whether experts are "proposing to testify about *matters growing naturally and directly* out of research
- (2) Whether the expert has *unjustifiably extrapolated* from an accepted premise to an unfounded conclusion.
- (3) Whether the expert has adequately accounted for *obvious alternative explanations*.
- (4) Whether the expert "is being as *careful as he would* be in his regular professional work outside his paid litigation consulting."
- (5) Whether the *field of expertise* claimed by the expert is *known to reach reliable results* for the type of opinion the expert would give.

12

Two Broad Themes After Daubert

- (1) Relocates the line between judge and jury, and turns judges into amateur scientists.
- (2) Creates a managerial model for judges (Case Management), with a new gravitational center -- experts

13

Courts Rule, Not Expert Communities

- AMA Code of Medical Ethics Opinion 9.07
- When physicians choose to provide expert testimony, they should have recent and substantive experience or knowledge in the area in which they testify, and be committed to evaluating cases objectively and to providing an independent opinion.
- *Their testimony should reflect current scientific thought and standards of care that have gained acceptance among peers in the relevant field*.

14

Hypo 1

- Plaintiff offers an expert on brittle ladder theory after a fall from a ladder caused many injuries.
- Suppose Judge Stone reviews dozens of publications regarding brittle fracture theory involving ladder defects.
- The judge ignored the potential rate of error and whether the theory was generally accepted in the scientific community.
- Yet the Judge found that the theory was sufficiently scientific to warrant a finding that it was more likely than not reliable. Permissible?

15

Hypo 2

- Plaintiff sued the manufacturer of a ladder, claiming it was defective and caused plaintiff's injuries. Plaintiff wanted to call an expert, Dr. Suzie Backus, an engineer by training, to testify that the caster stem collapsed on account of a brittle fracture resulting from overtightening. The expert found many articles on brittle fracture after a Google search.
- Allow?
- *See Bielskis v. Louisville Ladder, Inc.*, 663 F.3d 887 (7th Cir. 2011).

16

Hypo 3

- In a child sex abuse case, defense offers an expert M.D. on repressed memory and the suggestibility of memory. The expert had not interviewed the victims.
- What process should the trial court use in determining the admissibility of the expert testimony?
- 1. Arguments from both sides
- 2. Conducted Voir Dire
- 3. Considered amended Rule 702
- 4. Considered Rule 403
- Excluded the evidence. Proper?

17

HYPO Continued

- In State v. Walston, ___ N.C. ___, ___ S.E.2d ___ (May 5, 2017), the NC Supreme Court found the trial court did not abuse its discretion in excluding defense expert testimony about repressed and suggestible memory.
- The Court observed:
- 1. There is no rule that an expert must interview a victim 2. Rule 702 does not require specific procedural requirements for evaluating expert testimony.
- 3. Rule 403 can be considered as well as 702.
- 4. Here, the Trial Court did its job, acting as a gatekeeper in determining the admissibility of expert testimony.

18

19

Capital Case Issues

- 1. Mitigation Experts
- a. Generally
- b. Trauma-Informed Care/ Neuroscientific Evidence
- 2. Using Algorithms and Machine Learning in predictive Evaluations
- 3. Bias
- a. Generally
- b. Unconscious Bias
- 4. The Reliability of Forensic Science

20

1. Mitigation Experts

- Mitigation Experts Generally -- the Narrative
- "The psychologist performs psychological testing and offers diagnostic impressions with the goal of describing the defendant in a sympathetic light to the jury and attempts to explain why he committed the crime."
- John M. Fabian, "Death Penalty Mitigation and the Role of the Forensic Psychologist," 27 Law & Psychol. Rev. 73 (2003).
- Examples:
- 1. Trauma-Informed Care
- 2. Brain Development
- 3. Fetal Alcohol Syndrome

21

Generally

- Hypo 1: D blindly puts on one mitigation expert. Suffices?
- [No – Expert could lie about degrees]
- Hypo 2: D puts on a mitigation expert because she was recommended by the defendant's family.
- *[No – deficient. United States ex rel. Erickson v. Shomig*, 162 F. Supp. 2d 1020 (N.D. Ill. 2001).]
- Hypo 3: D puts on a mitigation expert who was vetted by the relevant professional community and recommended by three other experts
- [Court: Counsel has a duty to "discover and evaluate potential mitigating evidence." *McLaughlin v. Precythe*, 9 F.4th 819 (8th Cir. 2021)]

22

Trauma-Informed Care

Trauma-Informed Care: Based on empathic imagination

A. Theory: Trauma affects behavior later in life
B. Trauma affects brain chemistry & changes views of perceived threats.
C. The real question is what happened to a person earlier in life, not what was the motive in acting.

******

- "Smart People know themselves. Good people know others; wise people know themselves, others, and all that is around them." – anonymous

23

Trauma

"A traumatic experience impacts the entire person – the way we think, the way we learn, the way we remember things, the way we feel about ourselves, the way we feel about other people, and the way we make sense of the world..."
- Sandra Bloom, M.D.

See: Philadelphia and Sanctuary Model of care (Dr. Sandra Bloom 1980s)

Attorney General's Office in Pennsylvania

24

How Trauma Informed Care Changes the Operative Question

Old Question: "What is wrong with you?"

New Question: "What happened to you?"

25

ACEs & Trauma

A. Adverse childhood experiences (ACEs), are common stressful or traumatic events. E.g., abuse and neglect, witnessing domestic violence, or living with family members with substance use issues.

B. ACEs lead to a wide range of health problems including substance abuse.

C. ACEs accumulate to produce lasting harm

https://www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/adverse-childhood-experiences

26

Neurological Testimony

- Neuroimaging in the Sentencing Phase
- Hypo – In the sentencing phase of a capital case, the defense offered an expert physician to testify about the results of MRI and Positron Emission Tomography (PET) tests to show that defendant had structural and functional abnormalities in her brain consistent with the diagnosis of pseudocyesis, a false belief or delusion in being pregnant.
- Admit?
- Is there any causal connection between the abnormalities and the pseudocyesis diagnosis?
- *United States v. Montgomery*, 635 F.3d 1074 (8th Cir. 2011)

27

Other Neuroscience Evidence: Methods of Execution

- Russell Bucklew claimed Missouri's single drug method of execution violated his Eighth Amendment rights. It would cause him cruel pain due to a congenital medical condition (cavernous hemangioma) and that an alternative method, nitrogen hypoxia, should be used instead.
- Supreme Court: Anyone bringing an Eighth Amendment challenge must satisfy the *Baze v. Rees (2008) – Glossip v. Gross (2015)* test. The challenger must show a "superaddition of terror, pain or disgrace" and offer a viable alternative method of execution.
- Bucklew v. Precythe, 139 S. Ct. 1112 (2019).

28

Psychopathy Checklist in Sentencing

- In a capital homicide case, the trial court admitted a government expert who discussed the 'Psychopathy Checklist Revised' in the sentencing phase of the trial to show that the defendant was a psychopath and likely to be dangerous in the future. The defendant offered two articles written by his expert to rebut the prosecution's expert as to the scientific validity of the Checklist. The court admitted the testimony. Error? (*see, e.g., United States v. Barnette*, 211 F.3d 803 (4th Cir. 2000))
- Defendants sometimes offer expert testimony about Borderline Intellectual Function (BIF) and brain damage. There are various tests and experts who can be called.
- *U.S. v. Williams*, 731 F. Supp.2d 1012 (D. Hawaii 2010)

29

Psychopathy Checklist-Revised

- 1. Glibness/Superficial charm
- 2. Grandiose Sense of Self Worth
- 3. Need for Stimulation/Proneness to boredom
- 4. Pathological Lying
- 5. Conning/Manipulative
- 6. Lack of Remorse or Guilt
- 7. Shallow Affect
- 8. Callous/Lack of Empathy
- 9. Parasitic Lifestyle
- 10. Poor Behavior Controls ***

30

2. Algorithms, AI, and Machine Learning

- Predictions of Dangerousness?
- A. Intrado's Beware – Using software surveillance for threat-scoring system
- B. Harris Corp. Stingray cell-site simulators and trackers

31

Risk Assessment Algorithms in Sentencing

- A court used an algorithm-generated proprietary software risk assessment program, COMPAS, as a factor in sentencing a defendant. The defendant had pled guilty to driving a stolen car that was part of a drive-by shooting. The defendant challenged the sentence claiming the use of a risk assessment score violated his constitutional rights. Allow? *State v. Loomis*, 881 N.W.2d 749 (2016)

- Problems:
- 1. *Transparency* - proprietary system - what inputs were considered? Weights of the factors? How risk scores were calculated?
- 2. *Accuracy* - of inputs, weights assigned?
- 3. *Assumptions* - about groups vs. individuals (e.g., person in high-risk group not necessarily a high-risk individual)
- 4. *Bias* — especially with race and gender (do factors serve as proxies?)
- A. Can "gendered assessments" be taken into account for "statistical norming" purposes (e.g., men and woman have different rates of recidivism)?
- B. *Craig v. Boren*, 429 U.S. 190 (1976) — An Oklahoma law that allows women to drink 3.2% beer at age 18 and men at age 21 violates Equal Protection.
- 5. *Analysis* - Sample Size; methods; variables used

32

AI

- Opportunities:
- "AI will fundamentally transform the way we do science. Researchers in many fields are already employing AI to identify new solutions to a wide array of long-standing problems. Today, scientists and engineers are using AI to envision, predictively design, and create novel materials and therapeutic drugs. In the near future, AI will enable unprecedented advances in the social sciences, both through new methods of analyzing existing data and the development and analysis of new kinds of anonymized and validated data."
- President's Council of Advisors on Science and Technology Report on "Supercharging Research: Harnessing AI to Meet Global Challenges," (April 2024) (PCAST)

33

Challenges

- "In addition to its opportunities, we must recognize that AI can create new issues and challenges, such as distilling errors and biases embedded in skewed training data, the enormous—and increasing— amounts of energy required for the computational processes, the possibility that faulty science could be unwittingly generated, and the ease with which nefarious actors could use new powerful AI technologies for malicious purposes." Id.

34

3. Bias

- A. "Death Qualification" and Juror Bias
- a. Generally
- b. Heuristics (unconscious mental short cuts)

- B. NC Racial Justice Act of 2009

35

ABA GUIDELINE 10.10.2 – VOIR DIRE AND JURY SELECTION

- A. Counsel should consider, along with potential legal challenges … available in any criminal case (**particularly those relating to bias on the basis or race or gender**)….
- B. Counsel should be familiar with the **precedents** relating to … the procedures surrounding "death qualification" concerning any potential juror's beliefs about the death penalty. Counsel should be familiar with **techniques**:
- (1) **for exposing those prospective jurors who would automatically impose the death penalty** following a murder conviction or finding that the defendant is death-eligible, regardless of the individual circumstances of the case;
- (2) **for uncovering those prospective jurors who are unable to give meaningful consideration to mitigating evidence**; and
- (3) **for rehabilitating potential jurors** whose initial indications of opposition to the death penalty make them possibly excludable.
- C. **Counsel should consider seeking expert assistance in the jury selection process**.

36

Bias Hypos

- Hypo 1: A potential juror during voir dire states she has a moral problem with the death penalty.
- a. Should a judge strike the potential juror for cause?
- b. What should the judge ask now?

- Hypo 2: The juror then says it would likely interfere in their applying the death penalty, even if aggravating circumstances outweighed mitigating ones.
- d. If the juror is struck for cause, is this permissible?
- *State v. Garcell*, 363 N.C. 10, 678 S.E. 2d (2009)

37

- Hypo 2: Voir Dire takes 21 days. Does this cast doubt on juror impartiality?

- (*see In re Tsarnaev*, 780 F. 3d 14, 26 (2015))

38

Hypo 3

- On **January 5, 2015**, Juror 138 posted on Facebook he was called for jury duty with 1200 other people.
- **At 8:30 a.m.**, Juror 138's relevant Facebook entries read as follows:

- JUROR 138: Jury duty....this should be interesting... [marathon bomber]
- FRIEND 3: If you're really on jury duty, this guys got no shot in hell.

- **At 9:15 a.m.**, the district court told potential jurors:
- do not discuss this case among yourselves or with anyone else. That is because, as I've said, a jury's verdict must be based on the evidence produced at trial and must be free from outside influence. Therefore, I now order each of you not to discuss this case with your family, friends or any other person until I either excuse you, or if you are selected as a juror, until the trial concludes. This is a court order, willful violation of which may be punishable as a contempt of court or otherwise.

- If anyone should ask to speak to you about the case, you should politely decline.

39

Hypo 3 Continued

- **At 1:14 p.m.,** Juror 138 entered the same thread on Facebook and a friend commented:

- FRIEND 8: Play the part so u get on the jury then send him to jail where he will be taken care of
- JUROR 138: When the Feds are involved id rather not take my chances…them locals tho…pishhh ain't no thaang

- **Eighteen days later**, Juror 138 was questioned under oath.

- THE COURT: Good. When you left last time you were here, I had instructed everyone to avoid any discussion of the subject matter of the case with anybody. …Have you been able to do that?
- [JUROR 138]: Yeah. No, I haven't talked to anybody about it.

40

- THE COURT: Let me ask -- we asked you a little bit about social media, and you said you use Facebook?
- [JUROR 138]: Yes.

- THE COURT: Anybody commenting about this trial?
- [JUROR 138]: No.

- *U.S. v. Tsarnaev*, 96 F. 4th 441 (1st Cir. 2024)

41

Hypo 3 Continued

- The defense discovered Juror 138's Facebook posts (and others' social media posts) later, after voir dire. The defense moved to strike Juror 138 for cause or, in the alternative, question Juror 138 further.

- What would you do?

- The Court: There are two (2) steps to the analysis:
- #1: Was there a colorable or plausible claim of actual bias "incompatible with sitting as a fair juror?"

- #2: If yes, the court must conduct an adequate investigate.

- Standard of Review: Abuse of Discrection

42

The Court

- Q1: "Given the substance of the Facebook exchange and the apparently direct inconsistency between Juror 138's voir dire answers and his actual conduct, the record provides colorable support for the claim that a biased juror employed dishonesty to make his way onto the jury…"
- Q2: "Faced with a plausible claim of juror misconduct, the district court's "primary obligation [was] to fashion a responsible procedure for ascertaining whether misconduct actually occurred and if so, whether it was prejudicial." Zimny, 846 F.3d at 465 (quoting United States v. Rodriguez, 675 F.3d 48, 58 (1st Cir. 2012))….The inadequacy of the district court's investigation in this case follows inescapably from our previous discussion centering on the importance of learning the reason for Juror 138's inaccurate voir dire answer." *U.S. v. Tsarnaev*, 96 F. 4th 441 (1st Cir. 2024)

43

Unconscious Bias: 4 Common Heuristics (Mental Short Cuts)

- 1. Illusion of fluency – overestimate abilities
- 2. Confirmation Bias – seek information that fit own views and hypotheses
- 3. Anchoring Bias – a tendency to weigh the first piece of information too heavily
- 4. Availability Bias – The likelihood of an event is based on how easily we remember similar events.

44

Racial Justice Act

- 2009-2013
- 130 + inmates filed under the Act.
- 2012: First successful claims
- 2020: NC Supreme Court held that those who filed before the repeal could move forward
- 2024: *Hassan Bacote v. NC* (filed in 2010)(evidentiary hearing in 2024)(using statistics, social science, and history)

45

Statistics

- NC Newsline:
- Richard Smith, a professor of statistics at UNC Chapel Hill, testifies in Johnston County in a hearing for Hasson Bacote.
- Every Black person who has faced a jury in a capital trial in Johnston County between 1991 and 2014 received a death sentence, an expert in an ongoing hearing testified on Thursday.
- Data analyzed by Richard Smith, a professor of statistics at UNC-Chapel Hill, revealed that no Black defendants tried in capital cases in Johnston County received life sentences; they all were sentenced to death.
- Smith was the third witness called by defense attorneys in an ongoing evidentiary hearing for Hasson Bacote, a Black man sentenced to death in Johnston County in 2009. Bacote's lawyers are arguing to get him off death row, but first they must prove his death sentence was sought or obtained because of his race.

46

- It is unclear how many white defendants in Johnston County capital cases received death sentences, Smith said, because he received two different lists produced by defense and state attorneys. According to the data he received from the defense, five white people received life sentences after a capital trial, and four were given death. According to the list created by the state, seven white people were given life by juries in capital cases, and five were given death sentences.
- The differing datasets were a topic of conversation in court on Thursday.
- https://ncnewsline.com/2024/02/29/expert-every-black-person-tried-capitally-in-johnston-county-has-received-a-death-sentence/

47

4. The Reliability of Forensic Science

- Pres's Council of Advisors on Science and Tech. (PCAST)(2016):
- "[T]here are two important gaps: (1) the need for clarity about the scientific standards for the validity and reliability of forensic methods and
- (2) the need to evaluate specific forensic methods to determine whether they have been scientifically established to be valid and reliable, [especially] forensic "feature-comparison" methods— DNA samples, bitemarks, latent fingerprints, firearm marks, footwear, and hair."

48

PCAST

- • a 2002 FBI re-examination of microscopic hair comparisons the agency's scientists had performed in criminal cases, in which DNA testing revealed that 11 percent of hair samples found to match microscopically actually came from different individuals;
- • a 2004 [FBI] National Research Council report, on bullet-lead evidence, which found that there was insufficient research and data to support drawing a definitive connection between
- two bullets based on compositional similarity of the lead they contain;
- • a 2005[FBI] report to review the use of latent fingerprint evidence in the case of a terrorist bombing in Spain, in which the committee found that "confirmation bias"—the inclination to confirm a suspicion based on other grounds—contributed to a misidentification and improper detention; and
- • studies reported in 2009 and 2010 on bitemark evidence, which found that current procedures for comparing bitemarks are unable to reliably exclude or include a suspect as a potential biter.

49

2009 Nat'l Acad. Sci/ Nat'l Research Council Report on Forensic Science: A Path Forward

- Problems: Lack of Mandatory Standardization, Certification, and Accreditation
- The fragmentation problem is compounded because operational principles and procedures for many forensic science disciplines are not standardized or embraced, either between or within jurisdictions. There is no uniformity in the certification of forensic practitioners, or in the accreditation
- of crime laboratories.

50

2009 Nat'l Acad. Sci/ Nat'l Research Council Report on Forensic Science: A Path Forward

- Problems Relating to the Interpretation of Forensic Evidence
- Often in criminal prosecutions and civil litigation, forensic evidence is offered to support conclusions about "individualization" (sometimes referred to as "matching" a specimen to a particular individual or other source)…
- With the exception of nuclear DNA analysis, however,
- no forensic method has been rigorously shown to have the capacity to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source.

51

What Time is it?

52

The End

- Finish each day and be done with it. You have done what you could. Some blunders and absurdities no doubt crept in; forget them as soon as you can. Tomorrow is a new day. You shall begin it serenely and with too high a spirit to be encumbered with your old nonsense."

  ~ *Ralph Waldo Emerson*

- "Here comes the sun. And I say, it's all right." – *The Beatles*

53