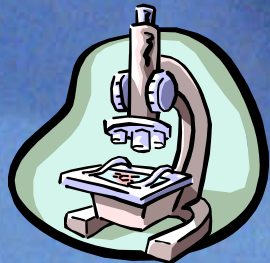
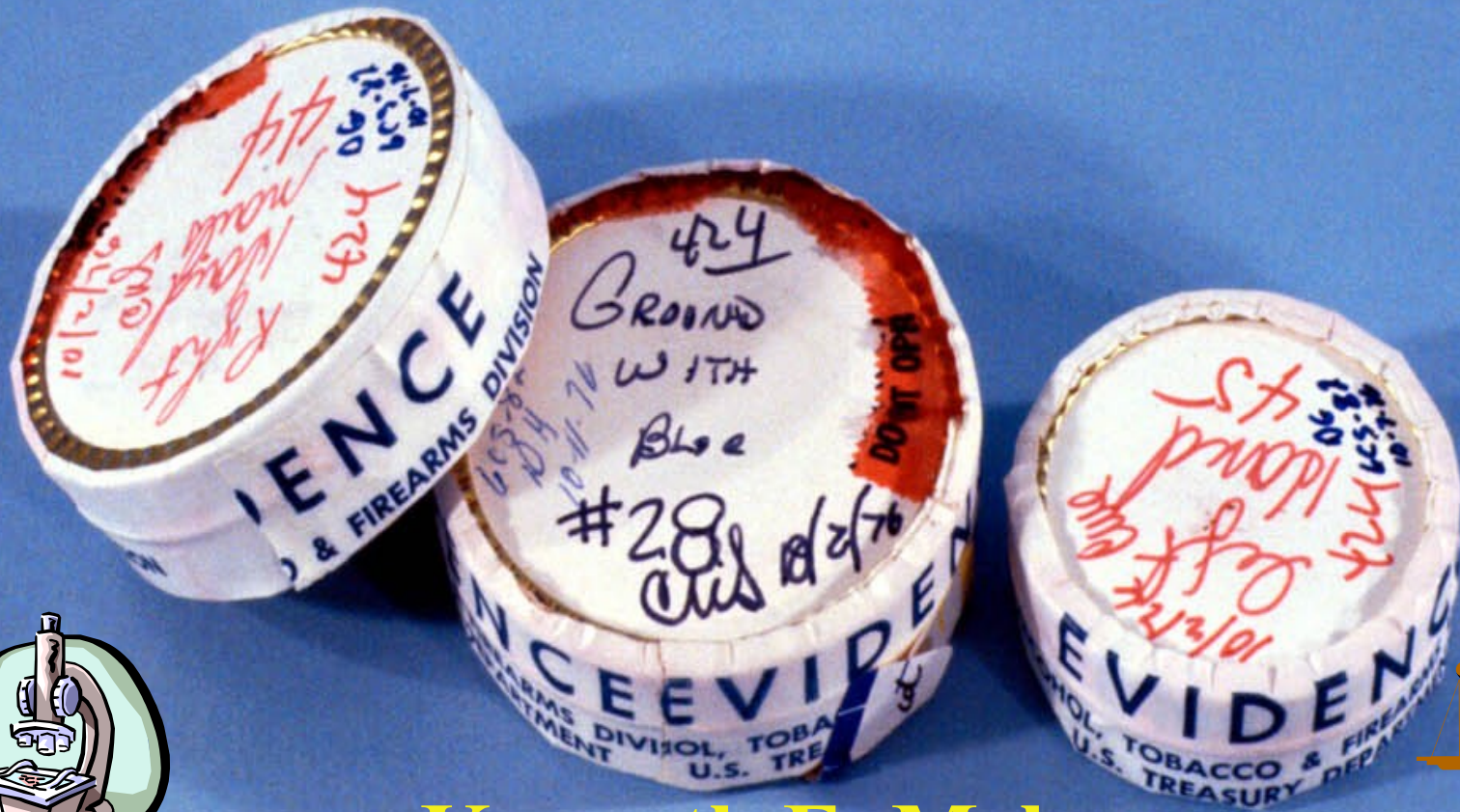


ADMISSIBILITY OF TRACE EVIDENCE: A WHOLELISTIC APPROACH-- DESPITE *DAUBERT*



Kenneth E. Melson

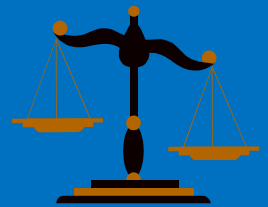
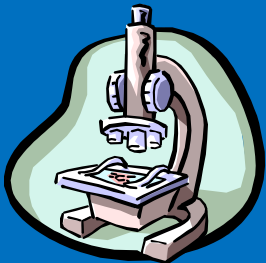
ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

TWO LEADING JUDICIAL TESTS:

1) *FRYE*

GENERAL ACCEPTANCE

COUNTING SCIENTIFIC NOSES

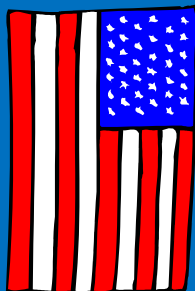


ADMISSIBILITY OF EXPERT OPINIONS

2) DAUBERT

--VALIDITY AND
RELIABILITY

--COURT DETERMINES
VALIDITY AND
RELIABILITY, PLUS
RELEVANCY



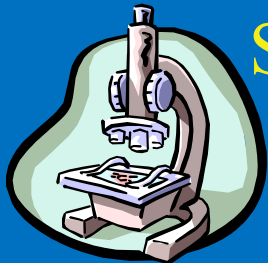
ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

DAUBERT:

--REQUIRED TEST IN FEDERAL COURT

--REPLACES FRYE IN SOME STATES

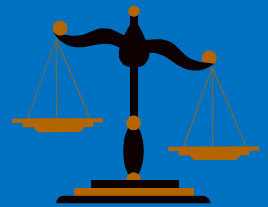
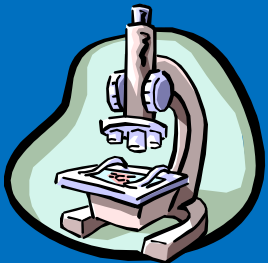
*See, Keierleber and Bohan, Ten Years After
Daubert: The Status of the States, 50 J Forensic
Sciences 1154 (2005)*



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

DAUBERT FACTORS:

1. TESTABLE HYPOTHESIS
2. SUBJECTED TO PEER REVIEW
AND PUBLICATION
3. KNOWN OR POTENTIAL ERROR
RATE

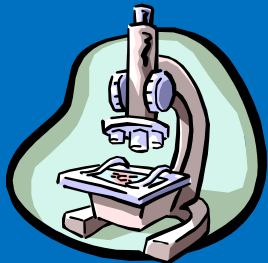


ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

DAUBERT FACTORS:

*3.5 MAINTENANCE OF STANDARDS
CONTROLLING THE TESTING*

*4. GENERALLY ACCEPTED WITHIN
THE SCIENTIFIC COMMUNITY*



Burnt Hairs in Arson Case

Epithelial Sheath: BCA Test Evidence



Hair from Suspect



Hair from Suspect

Control Test



Burned Test Hair Before Incubation



Unburned Test Hair After Incubation



DAUBERT'S LEGACY???

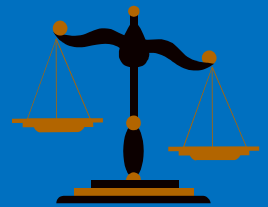
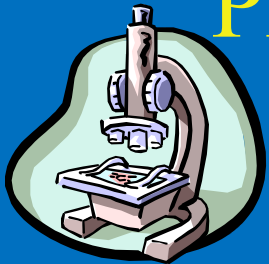


ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

DAUBERT:

--NOT A NEW APPROACH IN FEDERAL COURT; CONSISTENT WITH FED. RULE EVID. APPROACH

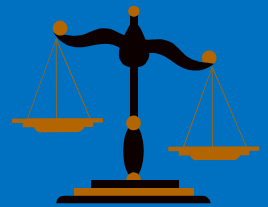
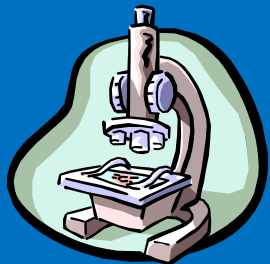
--EVIDENCE MUST BE RELEVANT AND PROBATIVE, AND OUTWEIGH PREJUDICIAL IMPACT



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

CLARIFICATION: DOES DAUBERT
ONLY APPLY TO SCIENTIFIC
DISCIPLINES?

ANSWER: *KUMHO TIRE COMPANY*

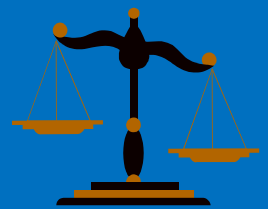
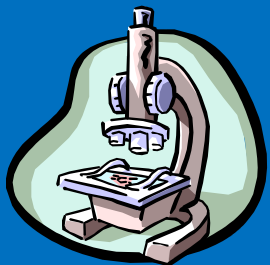


ADMISSIBILITY OF EXPERT OPINIONS

KUMHO TIRE COMPANY:

DAUBERT FACTORS ALSO APPLY TO:

*“TECHNICAL AND OTHER
SPECIALIZED KNOWLEDGE”*



ADMISSIBILITY OF EXPERT OPINIONS

KUMHO TIRE COMPANY:

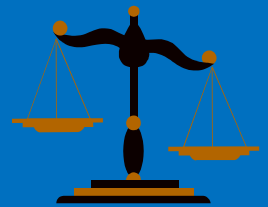
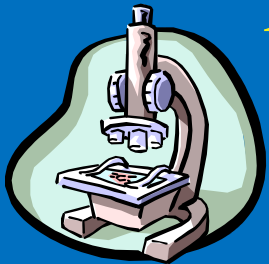
*--DAUBERT FACTORS ARE NOT A
“DEFINITIVE CHECK LIST”*

*(DO NOT ALL NECESSARILY APPLY EVEN IN
EVERY INSTANCE OF SCIENTIFIC TESTIMONY)*

--THE INQUIRY IS A FLEXIBLE ONE

ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

- MORE DIFFICULT FOR LAWYERS
AND JUDGES
- REQUIRES SCIENTISTS TO BE
EDUCATORS
- THEREBY FORCES SCIENTISTS TO
VALIDATE UNDERLYING SCIENCE
AND PROCEDURE

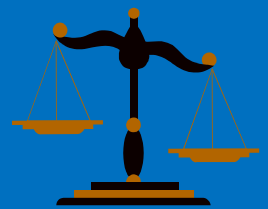


ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

RULE 702:

1. TESTIMONY IS BASED ON
SUFFICIENT FACTS AND DATA

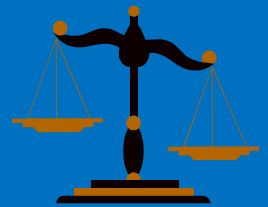
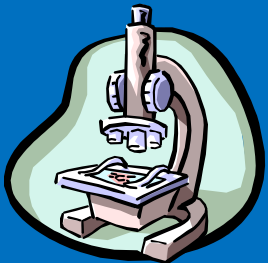
1. TESTIMONY IS PRODUCT OF
RELIABLE PRINCIPLES AND
METHODS



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

RULE 702:

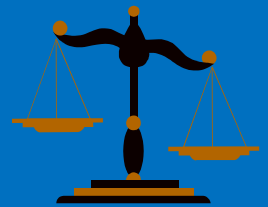
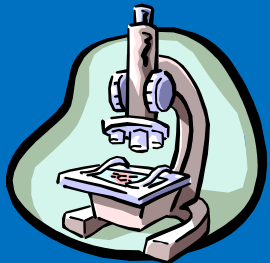
1. WITNESS HAS APPLIED THE PRINCIPLES AND METHODS RELIABLY TO THE FACTS OF THE CASE



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

TRACE EVIDENCE

--Fire Debris; GSR; Hair, Fiber, Glass;
Explosives (as listed by ASCLD/LAB)

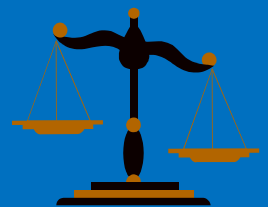
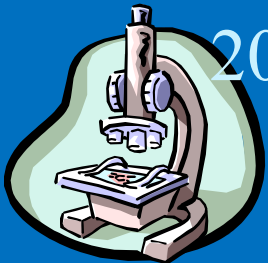


*VULNERABILITY TO ATTACK FOR DAUBERT CRITERIA 1 & 3**

CRITERION 1: TESTABLE HYPOTHESIS
(validity)

CRITERION 3: ERROR RATE
(reliability)

*Faigman, et al., MODERN SCIENTIFIC EVIDENCE
2006 Student Edition, §§1:35 – 1:44.



*VULNERABILITY TO ATTACK FOR DAUBERT CRITERIA 1 & 3**

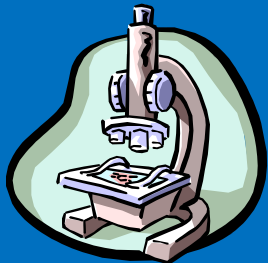
GLASS: MODERATELY HIGH

HAIR: HIGH

FIBER: MODERATELY HIGH

SOIL: MODERATELY HIGH

FIRE DEBRIS: MODERATELY LOW



*Faigman, supra.

A presentation slide titled "TRACE EVIDENCE" with a list of evidence types and a microscopic image of a fiber.

TRACE EVIDENCE

TYPES OF EVIDENCE

- TEXTILE FIBERS
- PAINTS AND POLYMERS
- GLASS
- SOIL
- GUNSHOT RESIDUE
- ARSON
- EXPLOSIVE RESIDUES
- MISCELLANEOUS

USACIL

ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

ERROR RATE:

LABORATORY ACCREDITATION

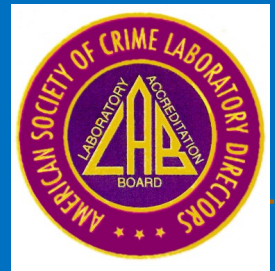
TECHNICAL REVIEWS

CASE FILES

QUALITY MANAGER AND MANUAL

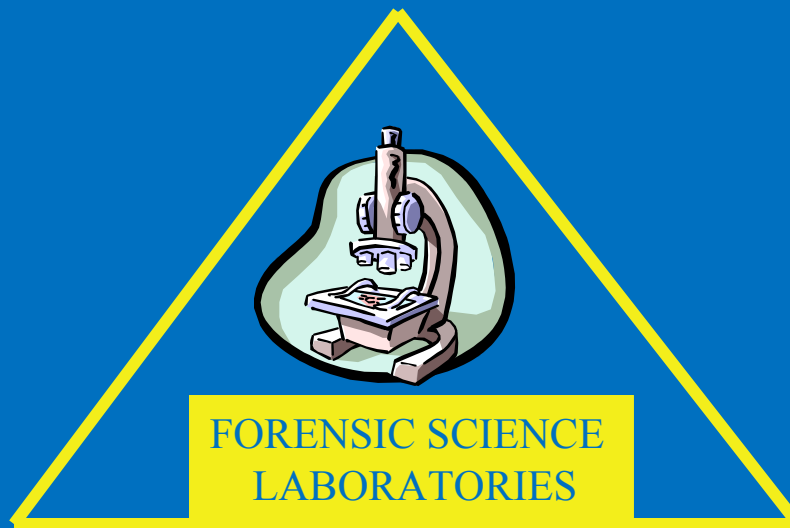
TESTING PROTOCOLS

PROFICIENCY TESTING



QUALITY OF SCIENTIFIC EXAMINATIONS

LABORATORY ACCREDITATION



QUALITY
MANAGEMENT
PROGRAMS

PROPER
APPLICATION
OF TECHNIQUE



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

ERROR RATE:

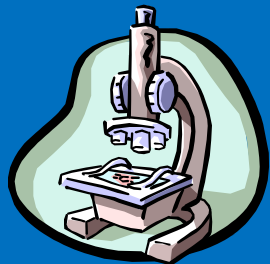
VERIFICATION

CERTIFICATION

PROFESSIONAL RESPONSIBILITY

(ETHICS) TRAINING

ETHICS

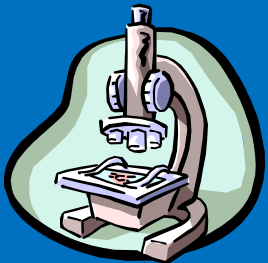


ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

RELATED TO ERROR RATE ARE

EXISTENCE AND MAINTENANCE
OF STANDARDS CONTROLLING
THE TESTING (*DAUBERT*)

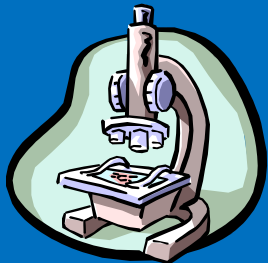
WITNESS HAS APPLIED THE
PRINCIPLES AND METHODS
RELIABLY TO THE FACTS OF THE
CASE (*FRE 702*)



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

NEW HAMPSHIRE v. LANGILL (2007)

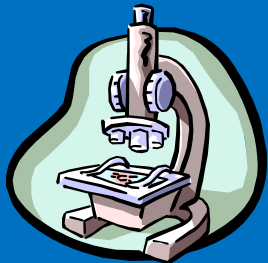
Witness violated lab's own operating procedures by not taking contemporaneous bench notes



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

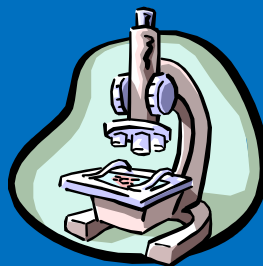
NEW HAMPSHIRE v. LANGILL (2007)

Verification process was not blind and
therefore subject to “confirmation bias”
(not part of manual)



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

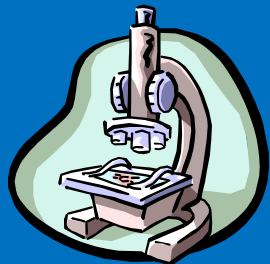
Might other courts consider “context effect” in determining reliability?



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

WHAT MIGHT TRIGGER ADAUBERT HEARING?

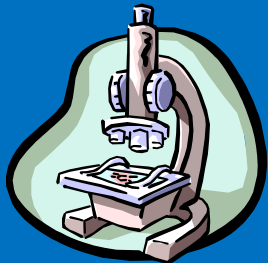
- Complexity of scientific evidence
- Uniqueness of scientific evidence
- Extent of individualization
- Significance of evidence to case
- Need for discovery
- Consumption of evidence



ADMISSIBILITY OF EXPERT OPINIONS IN TRACE EVIDENCE

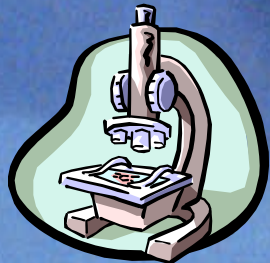
AT WHAT POINT MIGHT A DAUBERT HEARING BE HELD?

- Pre-trial
- During trial
(voir dire)



Daubert Kit

ADMISSIBILITY OF TRACE EVIDENCE: A WHOLELISTIC APPROACH-- DESPITE *DAUBERT*



Kenneth E. Melson