

Physical Evidence: From the crime scene to the courtroom



Should you wish to contact me:

- Barry Fisher
- (213) 989-5002
- bajfisher@earthlink.net



What is physical evidence?

- Something legally submitted to a competent tribunal as a means of ascertaining the truth of any alleged matter of fact under investigation before it.
- Physical evidence can be just about anything.

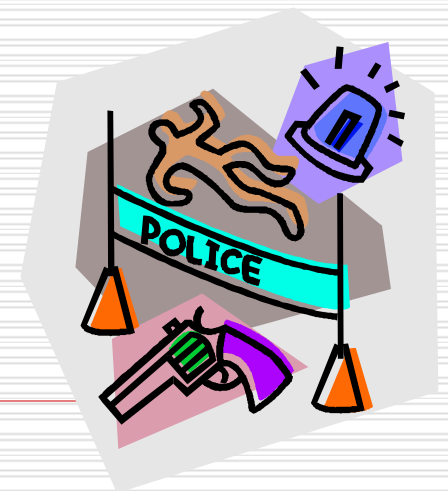


The search for physical evidence begins at the crime scene.



A crime scene can be

- An outdoor location.
- An indoor location.
- A body – living or dead.
- Or, for that matter, just about anything.



Some considerations:

- There are a large number of personnel who may be involved in the evidence collection process.
 - Some personnel work for forensic organizations while others may not.
 - There is no single organization which oversees the evidence collection process.
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A short list of crime scene evidence collectors:

- Uniformed officers
 - Detectives
 - CSIs
 - Criminalists / forensic scientists
 - Coroner investigators
 - Medical Examiners
 - Arson investigators
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Standards, SOPs, common sense

- Certification
- Accreditation
- SWIGs/TWIGs
- Best practice documents
- Agency policies
- What works?
- Few legal mandates.



Consequences:

- Failure to follow protocols generally goes to the weight of evidence given by an expert witness.
 - Agencies have used internal and external reviews to examine inappropriate evidentiary practices.
 - Generally the press or the defense bar is the catalyst for such reviews.
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The general theory of crime scene investigation:

- The *Locard Exchange Principal* - "Every contact leaves a trace." Theoretically, it is not possible to come in contact with a person or a space without changing it in some way. The challenge is to detect the change.



Edmund Locard
1877-1966

Paul L. Kirk, Phd
Crime Investigation, 1953

*“Wherever he
steps, whatever
he touches,
whatever he
leaves, even
unconsciously,
will serve as a
silent witness
against him.*



Not only his fingerprints or his footprints, but his hair, the fibers from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these and more, bear mute witness against him.

This is evidence that does not forget. It is not confused by the excitement of the moment.

It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value."

Some Basic Concepts:

- Protection of the scene of the crime
 - Searching, identifying and collecting evidence at the crime scene
 - Documentation of the actions taken at the scene through notes, drawings and photographs
 - Good communications with all persons associated with the crime scene and later investigation
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Who is in charge of the evidence?

- The Medical Examiner – Coroner for evidence associated with the body.
 - The police – before the case is “filed.”
 - The prosecutor – after the case is “filed.”
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Laboratory work

- The person collecting evidence at a crime scene may or may not conduct a laboratory examination.
 - Science practiced in crime labs and medical examiner or coroners' offices are more likely to have some form of oversight than other settings.
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Other settings

- Police agencies who provide limited forensic examinations.
 - Academics who become involved in forensic examinations.
 - Sole practitioner consultants.
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**State
and
Local
Crime Labs**

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graph TD; A[State and Local Crime Labs] --- B[Independent State Agency]; A --- C[Under a Police, Sheriff or Prosecutor's Office]; A --- D[Medical Examiner];
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**Independent
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Forensic Science Disciplines (Crime Laboratory):

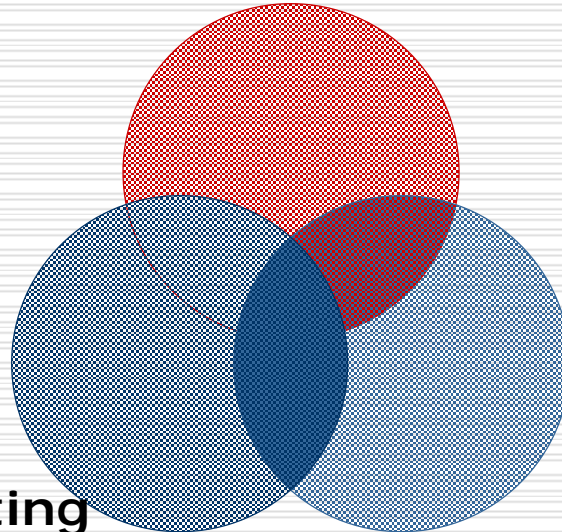
- Toxicology
 - Solid dose drugs
 - Forensic biology
 - Forensic microscopy/trace evidence
 - Firearms and tool marks
 - Question documents
 - Forensic chemistry
 - Fingerprint identification
 - Computer forensics
 - Forensic photography
 - Blood stain pattern interpretation
 - Crime scene reconstruction
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Medical examiner/coroner areas:

- Forensic pathology
 - Forensic toxicology
 - Forensic dentistry, bite marks
 - Forensic anthropology
 - Forensic entomology
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Quality assurance

Accreditation



Proficiency testing

Certification

Forensic science in the courtroom.

- Is the adversarial system the best way to understand science and expert knowledge?
 - Are judges able to understand science and technical issues to serve as “gate keepers?”
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Some issues to consider:

- But for a few exceptions, forensic science efforts are largely unregulated.
 - There are a number of high quality voluntary programs which help insure quality.
 - A few States are moving toward crime lab oversight, however that oversight does not include police agencies engaged in limited forensic work, private forensic examiners, coroner-medical examiner offices, or academics.
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Other issues:

- Opinion evidence and Daubert.
 - n Is forensic DNA testing the paradigm for evaluating all forensic evidence?
 - Crime Scene Reconstruction.
 - n Is it science or speculation?
 - n Should video recreations be admissible?
 - Bloodstain pattern recognition.
 - n How much credence should be given?
 - Context bias.
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Brady material.

- Brady is a U.S. Supreme Court case which defines the prosecutors obligation to turn over material evidence to the defense.
 - Do prosecutors review forensic related matters adequately to meet their obligations?
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Thank you.

- Q&A

