Crime LABORATORIES
Crime Laboratories:
• Facilities specifically dedicated to forensic analysis of criminal evidence.
• Centers for forensic investigation of ongoing criminal cases.
• Research new techniques and procedures to aid investigators in the future.
There are things that are still beyond the reach of current technology to accomplish…
CRIME LAB

okay zoom in on that

further

THERE

THAT'S OUR KILLER

AND SO:
HOW DID YOU FIND ME

SAME WAY WE FIND EVERYONE, BUDDY

SAME WAY WE FIND EVERYONE
Oldest American Crime Lab

- LAPD
- 1923 August Vollmer - Police Chief
- 1930’s he headed the first U.S. university institute for criminology and criminalistics at UC at Berkeley
FBI Crime Lab

- 1932 - J. Edgar Hoover organized the national laboratory that would offer assistance to all law enforcement agencies.
- Currently world’s largest lab, performing more than 1 million examinations per year.
Early FBI Crime Lab circa 1930’s
FBI Crime Lab
• 1981 FBI’s Forensic Science Research and Training center opened.
  • Facility dedicated to conducting research to develop new and reliable scientific methods.
  • Used to train crime lab personnel in latest techniques and methods.
Approximately 350 public crime laboratories operate at various levels of government.

• Several reasons explain the unparalleled growth of crime labs in the last 40 years:
#1 - Supreme Court decisions in the 1960’s:

- compelled police to put greater emphasis on securing scientifically evaluated evidence. (Due to advising suspects of their rights, confessions have essentially been eliminated).

Miranda warning (United States)

You have the right to remain silent. Anything you say or do can and will be used against you in a court of law. You have the right to an attorney. If you cannot afford an attorney, one will be appointed to you. Do you understand these rights as they have been read to you?
#2 - Modern technology has provided forensic scientists with many new skills and technologies to meet the challenges that come with their increased participation in law enforcement.
#3 - A staggering increase in crime rates in the USA over the past 40 years. Specifically illicit drug seizures which must all be sent to a forensic lab for analysis.
Crimes per 100,000 residents, 2004
• #4 - The advent of DNA profiling.
DNA (1990’s)

- It is foreseen that 10 thousand forensic scientists will be needed to process crime scene evidence for DNA doubling the number of current scientists in the field of forensics.
- 200-300,000 convicted offender samples and more than 540,000 evidentiary samples for which no suspect has been located remain to be analyzed nationwide.
The United States has no national system of forensic laboratories.

Local law enforcement jurisdictions (city, county, and state) each operate their own independent crime labs.

1972 California developed a network of integrated state operated crime lab with information exchange readily available to foster cooperation among criminalists.
Organization of a crime lab

• Because of the exponential growth in the last forty years there has been a lack of national and regional coordinating and planning.

• Due to this the crime lab does not have one distinctive model- the size and diversity of the crime lab varies
Organization of crime lab

• Approximately 350 crime labs in US
  • Federal, state, county, and municipal.
  • Most function as part of a police department.
  • Others fall under direction of the prosecutor or district attorneys office.
  • Some work with labs of the medical examiner or coroner
  • A few are affiliated with universities or exist as independent agencies in government.
Organization of the crime lab

- Laboratory staff ranges from one person to more than 100
- Their services can be diverse or specialized.
4 Major federal crime labs

- FBI - largest crime lab in the world located in Quantico, Virginia
- DEA (Drug Enforcement Agency)
- ATF (Bureau of Alcohol, Tobacco, Firearms, and Explosives)
- US postal inspection service
Other countries

• Great Britain - national systems of labs controlled by governments’ Home Office.

• Canada 3 government funded institutes:
  • 6 Royal Canadian Mounted Police regional laboratories.
  • Centre of Forensics in Toronto.
  • Institute of Legal Medicine and Police Science in Montreal.
Why is there little organization or consistency among American labs?

• Variations to local laws.
• Different capabilities and functions or organizations to which a lab is attached.
• Budgetary and staffing limitations.
“Full service crime Lab” would include....

• Physical Science Unit- applies principles and techniques of chemistry, physics and geology to identification and comparison of crime scene evidence
  • Staffed by criminalists who have the expertise to use chemical tests and modern analytical instrumentation
  • Responsible for drugs, glass, paint, explosives, soil, mineral analyses, variety of trace physical evidence
“Full service crime Lab” would include….

- Biology Unit
  - Include biologists and biochemists who identify and perform DNA profiling
  - Samples include dried blood, bodily fluids, hair, fibers, wood, plants
“Full service crime Lab” would include…. 

- Firearms unit
  - Examines firearms, discharged bullets, cartridge cases, shotgun shells and ammunition of all types, tool markings
  - Garments and other objects can be examined to detect residues and approximate distance to a target to which a weapon was fired
“Full service crime Lab” would include….

- Document Examination unit
  - Studies handwriting, typewriting on questioned documents for authenticity and source
  - Includes analyzing paper and ink, indented writings, obliterations, erasures, and burned/charred documents
“Full service crime Lab” would include…. 

- Photography Unit
  - Examines and records physical evidence and makes the invisible visible
  - Includes digital imaging, infrared, ultraviolet, X ray
  - Prepares photographic exhibits for use in courtroom
“Full service crime Lab” would include….

- Toxicology Unit
  - Examines bodily fluids for presence of drugs, alcohol, or poisons
- Latent Fingerprint Unit
  - Processes and examines evidence for latent fingerprints
- Polygraph Unit
  - “Lie detector” test
“Full service crime Lab” would include….

- **Voice Print Analysis Unit**
  - Tape recorded messages or telephone threats
  - Uses sound spectrograph that transforms speech into visual graphic called a voiceprint

- **Crime Scene Investigation Unit**
  - Dispatches specially trained personnel to collect and preserve physical evidence that will be later processed at the crime lab
5 Basic services of crime lab

- Physical science unit
- Biology Unit
- Firearms Unit
- Document Examination Unit
- Photography Unit
Specialized Forensic Services

- **Forensic Pathology** - ME or coroner
- **Forensic Anthropology** - bones
- **Forensic Entomology** - bugs
- **Forensic Psychiatry** - mental health
- **Forensic Odontology** - teeth/bites
- **Forensic Engineering** - reconstruction
- **Forensic computer and digital analysis** - hacking, cell phone, computers
The Utah Bureau of Forensic Services

• is the American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB) International accredited state laboratory system that specializes in forensic science. We offer all of our services free of charge to the police agencies of Utah.
The Utah Bureau of Forensic Services Laboratory System was created by the Legislature to provide timely and comprehensive criminalistic services to criminal justice entities within the State of Utah.

The system is composed of three laboratories that are located:

1 - Central Lab:
   - 4501 S Constitution Blvd
   - Salt Lake City, UT 84129

2 - Northern Lab:
   - 819 West 2nd Street
   - Ogden, Utah 84404

3 - Southern Lab:
   - SUU Tech Building Room 9
   - 351 West Center
   - Cedar City, Utah 84720
Our areas of expertise are:

- **Forensic Biology:** Serology (Central and Northern Labs), DNA, CODIS
- **Forensic Chemistry:** Controlled Substances (all labs), Fire Debris, Paint
- **Impressions:** Footwear, Tire, Latent Print Processing, Latent Print Comparison, AFIS (Central Lab) and Latent Print Processing and Latent Print Comparison (Southern Lab)
- **Firearms/Tool marks:** Physical Matches (Northern Lab)
- **We are currently in the process of preparing for accreditation in the following areas:** Crime Scene and Fibers
- **All services are performed at the Central Lab only unless stated otherwise**
Crimes against a person:

- Including but not limited to homicides, sexual assaults, and aggravated assault, are the top priority in the laboratory.
  - These cases will be given priority over all other cases.
  - Detectives are encouraged to discuss the case with a serology/DNA analyst before analysis begins.
  - Major cases involving multiple items of evidence may require a meeting between detectives, prosecutors, and analysts to screen the items of evidence in order to determine their probative value and the likelihood of DNA recovery.
Property crimes:

- Including but not limited to theft, burglary, and robbery.
- 2 items of evidence may be submitted for property crimes (includes question samples, excludes standards).
- Only FELONY crimes will be analyzed for DNA. Misdemeanor cases will not be analyzed.
Possession crimes:

- Including but not limited to gun possession and drug possession.
  - Drug possession cases **will not** be worked.
  - 2 items of evidence may be submitted for possession crimes (includes question samples, excludes standards).
  - Only FELONY crimes will be analyzed for DNA.
Cold cases:

- A meeting is required with a serology/DNA analyst to discuss the case when submitting a cold case to the laboratory for DNA analysis.
- All evidence is to be discussed and prioritized prior to submission, to avoid multiple submissions.
- The case will be reviewed and previous testing will be taken into consideration when determining what samples should be tested for DNA.
- Priority is given to current and active cases over cold cases.