

# FORENSIC DNA EXPERTS

Why do I need one?

# Why Have the DNA Results Reviewed?

## A few frightening examples:

- ❖ Las Vegas, April 2002: A clerical error at the Las Vegas police forensics lab led to a man being jailed for a year for sex crimes he did not commit.
- ❖ Seattle, July 2004: 23 cases of contamination (including several cases of self-contamination) at the State Patrol Crime Lab are brought to light by the Seattle Post-Intelligencer.
- ❖ Germany, March 2009: The “Phantom Serial Killer”, wanted in connection with at least 40 crimes is revealed to be a false lead – the DNA was already present on the swabs used to collect the evidence.

# Agenda

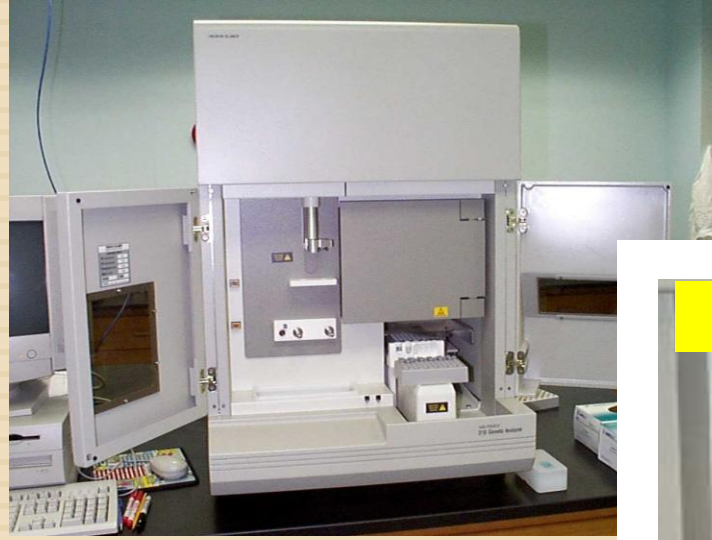
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- Introduction
- What to ask for in a discovery request and why
- Components of a thorough review
  - ▣ Evidence / chain of custody review
  - ▣ Serological testing review
  - ▣ Breakdown of DNA analysis steps
  - ▣ Electronic DNA data review

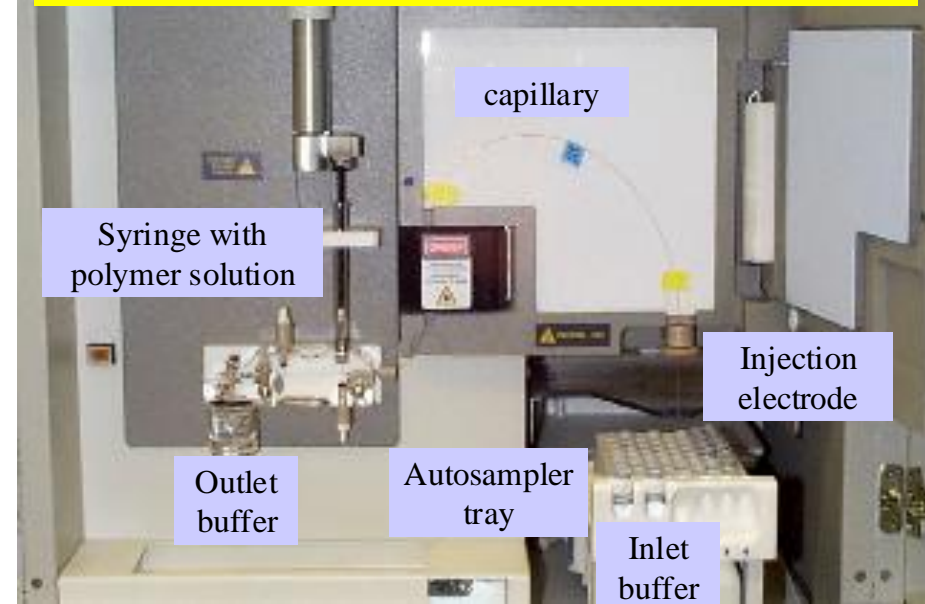
# Agenda

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- Understanding the DNA report
  - ▣ Components of the report
  - ▣ Confusing and/or inaccurate conclusions
- CODIS
- Statistics
  - ▣ A brief overview of forensic calculations
  - ▣ Statistics and DNA mixtures
- Other ways your DNA expert can help



## ABI Prism 310 Genetic Analyzer



## Electrophoresis and Analysis

Process of separating and visualizing the newly amplified DNA fragments

# Electrophoresis and Analysis

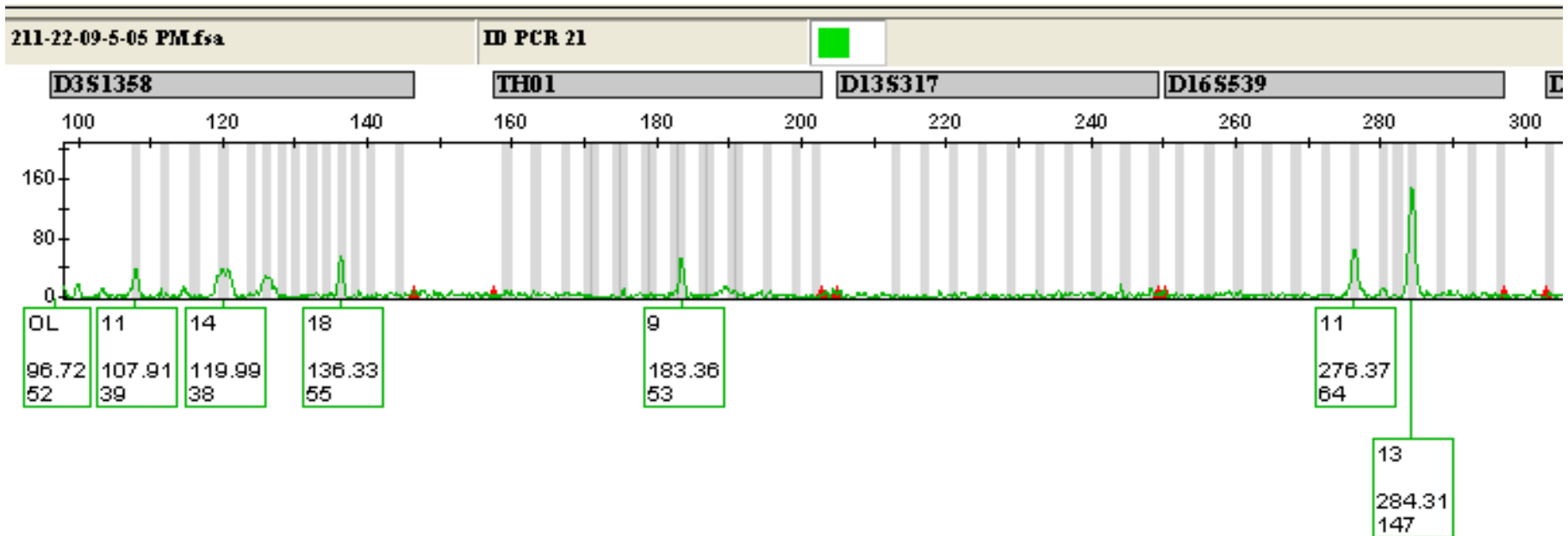
- Electronic Data
  - ▣ Extremely important for the review to include the electronic data.
  - ▣ Electronic review has caught many errors, including high profile errors at the FBI and Cellmark that rise to the level of FRAUD

# Printout vs. Electronic Data

Laboratory's reported results:

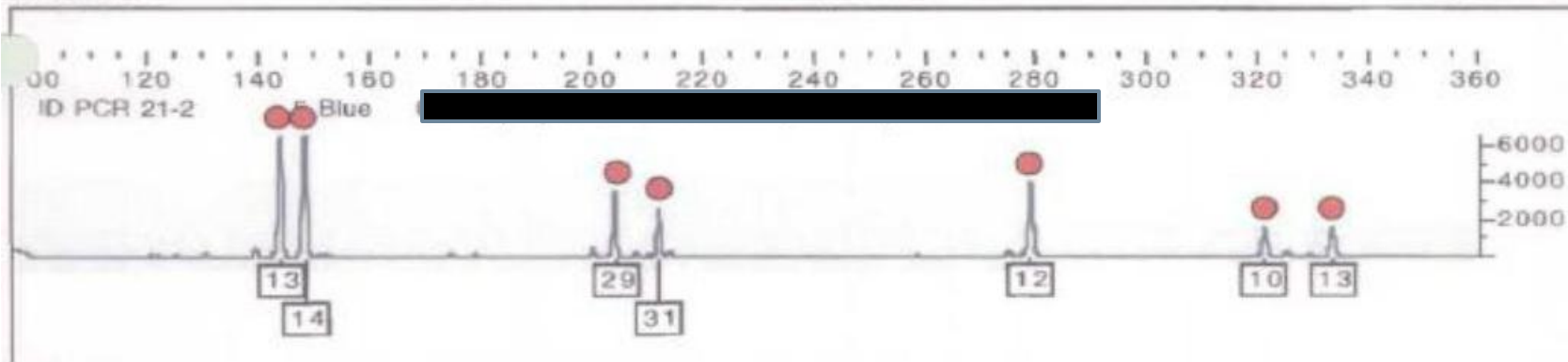


Same data re-analyzed:

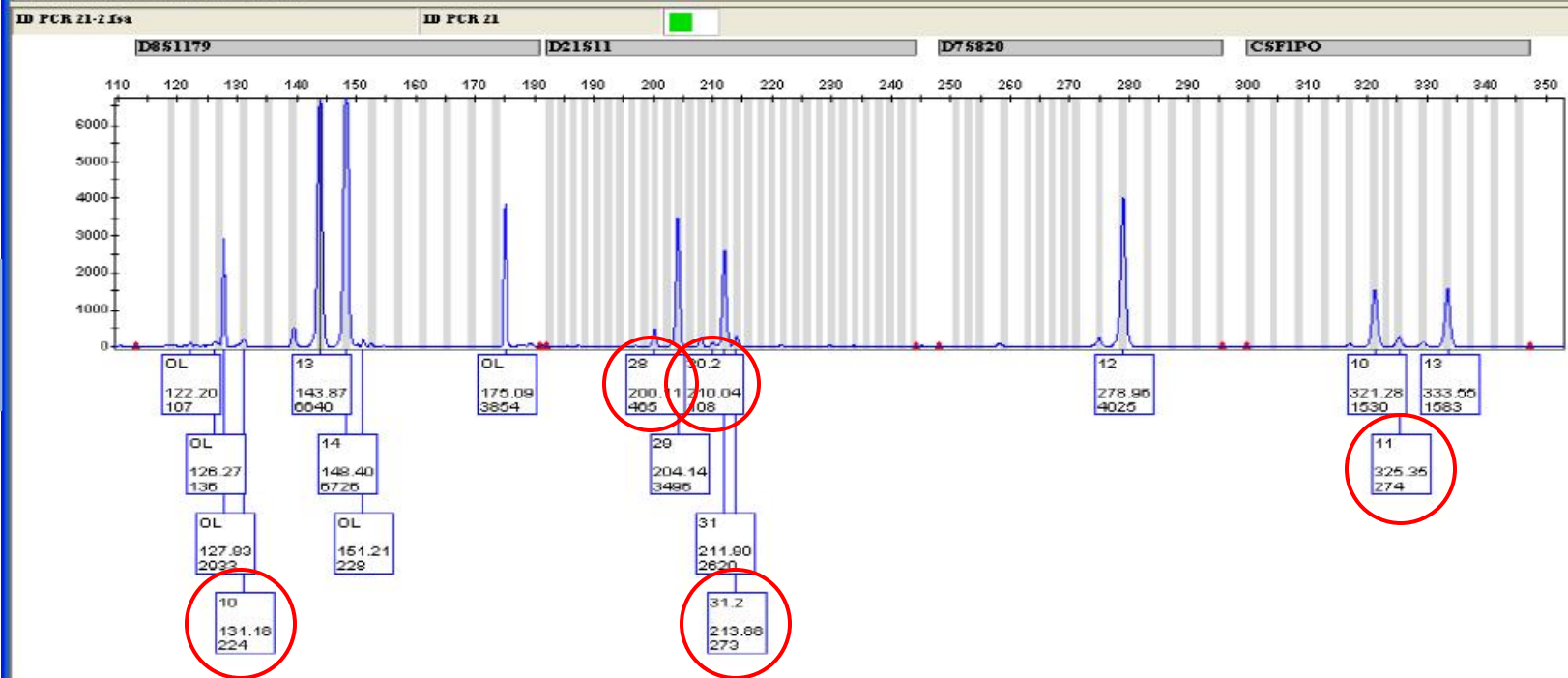


# Low-level Mixtures

Original analysis:



Re-analysis by defense expert:





## The Report

Meant to be an all-inclusive summary of findings and results

Date  
Jane Smith  
District Attorney's Office  
DA Avenue  
Somewhere, CA 90000

Lab Case #: C070030  
Agency Case #: 065-08489

Subject(s): Ray Jones  
Victim(s): Jane Doe

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**REFERENCE:**

This report is in reference to the following items of evidence, which were received via \_\_\_\_\_ from \_\_\_\_\_ on [date]. Serological examination and STR testing was requested.

**ITEMS RECEIVED:**

1A	Buccal swab from Ray Jones
2	Blood reference from Jane Doe
6	Duct tape
12	Paring knife
13	Knife
15	Victim's underwear
18	Hat
19	Pants

Evidence Lab does **not** test:  
Knife handle  
Nail clippings  
Duct tape  
Blindfold

# How else can an expert help?

Your DNA expert should be available to you for more than just case reviews.

# Other Service:

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- Observation of consumptive DNA testing
- Preparation of questions for opposing counsel's DNA expert
- Review of deposition or trial transcripts from opposing counsel's expert
- Training and Informational resource
- DNA re-testing if associated with a private lab

# What should you look for when choosing a DNA Expert?

- Experience
  - ▣ Do they now or have they ever worked in a DNA lab as an analyst?
  - ▣ How many years?
  - ▣ Have they worked on defense cases before?
  - ▣ Have they worked for more than one lab?
  - ▣ Do they have DNA auditing experience?
  
- Court Testimony
  - ▣ Have they testified in court as DNA expert?
  - ▣ Prosecution and defense?
  - ▣ Have they ever not been allowed to testify as an expert?
  - ▣ Review transcripts if possible

Ask for attorney or investigator references