Changing the Culture of Forensic Science

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The culture of forensic science is the environment in which the service is provided and received. It is dictated by the notions and expectations of both the practitioners and stakeholders. When there are unreasonable expectations from either party, the culture suffers.

Must the culture of forensic science change?

- We are in the science business, not the conviction or exoneration business.
- Customer service and training must be a major component of our expert skill set.
- The role and purpose of Michigan’s crime laboratories must be clear and reasonable.
- Customers must be knowledgeable about forensic science and crime labs.
- We have to accept responsibility for how our results are used inside and outside of the courtroom.

Today’s Outline:

- My Most Controversial Decision
- Michigan’s Crime Lab System
- Criticisms of Crime Labs
- Brief History of Crime Labs in the U.S.
- Backlogs and Speed of Analysis
- Accreditation and Quality Assurance
- Changing the Culture of Forensic Science
Current Staffing and Budget
• 221 Employees
• 6.7% of State Police Budget
• Target Staffing ~ 250
• Approximately 80,000 analyses / yr.

Detroit / S.E. Michigan Region
• 40% of all Michigan lab cases
• 20% of all cases from Detroit
• 60% of lab cases from outstate

Critical Indicator of Service
Average Turnaround (Days) Max/Min
FEB 2010 ................. 96
MAR 2012 ................. 48
Backlogs were a major problem in MSP labs before the closure of the Detroit Crime Lab. Backlogs were a major problem in MSP labs before the closure of the Detroit Crime Lab.

A Broken System
capacity vs. demand
Police:
Takes too long to get results
Prosecutors:
Won’t do what I ask
Defenders:
Testimony is biased, pro-prosecution
Judges:
Slow turnaround affects my docket

The biggest challenge of managing crime labs is balancing competing feelings of ownership, and creating clarity about what our labs do.

St. Valentine’s Day Massacre. Chicago 1929

Lindbergh Baby Kidnapping & Murder - Hopewell, NJ 1932
Crowds gather on the street to witness the trial of Richard "Bruno" Hauptmann in Hunterdon, New Jersey in 1935.

First scientific detection labs in the U.S.

- 1916    Berkeley, CA
- 1924    Los Angeles, CA
- 1929    Chicago, IL
- **1929**    Detroit, MI
- 1934    New York, NY
- 1935    Buffalo, NY
- 1937    Kansas City, MO

Demand for forensic science explodes (1960 – 1995)

Crime Labs Costly—but Save Money

TED SELL
Los Angeles Times (1886-Current File); Apr 18, 1955

Backlogs and Speed of Analysis

Fig. 8.1. Female and Male Homicide Victimization in the United States
Backlogs and Speed of Analysis

Two Distinct Metrics:

**Backlog:** Count of submitted work requests waiting to be completed.

**Turnaround Time:** Days waited between work request and results issued.

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**Backlogs and Speed of Analysis**

"Sorry Judge, we can't proceed because we don't have the lab results."

"Why don't you have the lab results?"

"The crime labs are backlogged and we are still waiting for testing to be completed."

"I'm ordering the work to be done."

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**Backlogs and Speed of Analysis**

Adding to the problem . . . .

We are not your "normal" laboratory

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**Backlogs and Speed of Analysis**

**Major Quality Assurance Risk!**

- Deadline of a court order creates a conflict of interest.
- We can't predict complications / factors that will require time to resolve during testing.
- We usually need 30 days!
"... nearly all major problems faced by crime laboratories today are aggravated by one common denominator, which if corrected, could reinvigorate the profession of forensic science and restore its prominence in the eyes of some who have lost confidence in it.

"That common denominator is the profound imbalance between the insatiable demand for forensic science services and the limited capacity of laboratories to meet that demand. This problem, however, is not intrinsically technical or scientific in nature.

"It's a problem of economy and must be dealt with as such."

National Academy of Sciences Testimony, 2007
Washington, D.C.

Balanced Customer / Provider Participation

For All Your Automotive Needs

616-452-0030

NL Automotive
Grand Rapids

Automotive service requires collaboration between customer and provider.

Backlogs and Speed of Analysis

A Broken Model for Michigan – “Dump and Run”

Our Priority
Balance police need for rapid and responsive lab testing with prosecutor need for thoroughness and jury satisfaction


Time to Shift Gears
What is really the basis of all science?

- Error rates?
- Measurement uncertainty?
- Peer Review?
- Accreditation?
- Web Accessible Research?
- Practitioner Certification?
- NO!

It’s about the confidence of the user.

What must users of science evaluate?

1. What does the expert’s opinion mean?
2. How confident is the expert in the accuracy and wording of his/her opinion?
3. What is the basis of that confidence?

Science is about confidence

The major problem in forensic science is the growing inadequacy of how we word our conclusions. This is also a management problem.

A Word on Error Rates

Precautions for an exercise heart rate monitor.

What are some precautions for a forensic testing report?

- Scientists do not have full knowledge of investigative details.

The author of this report has no opinion about guilt or innocence.

Intensely adversarial environments may prevent a full understanding of scientific evidence.

Accreditation and Quality Assurance

Accreditation is not an event or a test; it is process of compliance and a commitment to continuous improvement that we began in 1984.

The most significant revolution in forensic science is how conclusions are reported.
How should we feel about forensic science?

- High confidence is fully justified . . . . but
- There is always a potential for error. Must be respected and understood – and more research will be beneficial.
- Our criminal justice system is better because of them.
- Significant errors are rare as a percentage of opportunities, and are usually found before results are reported.
- Bad management is a greater risk than bad science.

3 Simple Goals:

1. Issue results in less than 30 days
2. Maximize the “value density” of incoming evidence
3. Elevate Michigan’s expertise in the management of forensic evidence

"... and never the twain shall meet..."
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