

# National Academy of Sciences Needs of the Forensic Sciences Community Committee

## The perspective of the FBI Laboratory and other Federal Crime Laboratories



# FBI/ Federal Laboratories

- Quality of Forensic Science Services
- The 9/11 mission change: State and Local vs. Federal Laboratories
- Unfunded Mandates
- Working partnerships
- Training
- Research and Development
- Data sharing and interoperability
- Best Practices



# All Forensic Laboratories

## Quality of Forensic Science Services

- Ensuring the quality of laboratory analyses is the first and foremost issue for all laboratories
- Laboratory Accreditation
- Individual Certification



# FBI LABORATORY

- **Approximately 550 Employees**
  - Special Agent and Support Personnel
  - 10% of FBI Laboratory personnel are Special Agents
- **Minimum of Bachelor of Science Degree Required**
- **Generally no problem recruiting personnel**
- **Average crime laboratory in US is much smaller and post 9/11 missions are somewhat different than the FBI Laboratory and other Federal Labs**



# State and Local Laboratories

Provide forensic services to duly constituted law enforcement agencies within their jurisdiction





**9/11/01**

Changed the  
mission of the  
FBI Laboratory  
and other  
Federal Forensic  
Laboratories

# FBI/ Federal Laboratories

## Pre 9/11 Mission

- Provide forensic services to the FBI and any other duly constituted law enforcement agency
- Provide technical and forensic assistance through research, training and technology transfer and access to information and forensic databases

## Post 9/11 Mission

Mission has expanded to assist in the prevention of terrorism and provide forensic services to law enforcement **and intelligence agencies worldwide**



# FBI/ Federal Laboratories

## Post 9/11 Mission

Mission has expanded to provide greater forensic response and analysis capabilities.

The required response and analysis capabilities are highly specialized requiring more research and development, training, expertise, instrumentation, funding for response and analysis, etc.





# FBI/Federal Laboratories

## Post 9/11 Mission

With the new mission and new legislation, minimal/no increases have occurred in resources for funding and personnel despite numerous requests for enhanced

Congressional funding



# Example of unfunded legislative mandate :

## Public Law 109-162: DNA Fingerprint Act Provisions

Authorizes the Attorney General to collect DNA samples from persons who are arrested or from non-United States persons detained under the authority of the United States



# Public Law 109-162: DNA Fingerprint Act Provisions

Approximately 250,000 federal arrestees and Federal detainees may raise total requiring DNA analysis to approximately 1.5 million per year

No funding or personnel has been appropriated to facilitate testing



# FBI/Federal Laboratories

## Post 9/11 Mission

With the new mission and new legislation, law enforcement and intelligence agencies have been required to create working partnerships in the fight against crime and terrorism.



# FBI/Federal Laboratories

## Best Practice: Working Partnerships

The FBI Laboratory coordinates forensic analysis of chemical, biological and nuclear materials/weapons of mass destruction with numerous other laboratories.



**ANTHRAX**



# FBI/Federal Laboratories

These partnerships are generally highly productive. However, for the partnerships to flourish, additional, continuous expenditures of financial and personnel resources are required.



# Scientific Working Groups (SWGs)

## Best Practice: Working Partnerships

- Scientific Working Groups of forensic scientists are tasked with generating guidelines and standards for specific forensic disciplines. Interoperability issues discussed/implemented.
- Meet twice per year
- FBI sponsored/NIJ funded



# Scientific Working Groups (SWGs)

- Scientific Working Group for Friction Ridge Analysis, Study and Technology (SWGFAST)
- Scientific Working Group for Material Analysis (SWGMAT)
- Scientific Working Group for the Analysis of Seized DRUGs (SWGDRUG)
- Scientific Working Group on DNA Analysis Methods (SWGDM)





# Scientific Working Groups (SWGs)

- Scientific Working Group for Forensic Document Examination (SWGDOC)
- Scientific Working Group for Microbial Genomics and Forensics (SWGGMGF)
- Scientific Working Group on Forensic Analysis of Chemical Terrorism (SWGFACT)
- Scientific Working Group on Imaging Technologies (SWGIT)



# Scientific Working Groups (SWGs)

- Scientific Working Group for the Analysis of BloodSTAIN patterns (SWGSTAIN)
- Scientific Working Group for the Analysis of Tire and Footwear Impressions (SWGTTREAD)
- Scientific Working Group on Forensic Analysis of Firearms and Toolmarks (SWGFGUN)



# FBI/Federal Laboratories

## Training Mission

The most common request heard by the FBI Laboratory from the forensic community is the request for quality training programs by experienced professionals



# FBI LABORATORY

## Training Mission

With the increase in mission to provide forensic services to law enforcement and intelligence agencies worldwide, adequate resources are not available to provide the training required by the forensic community



# FBI LABORATORY

## Research and Development Mission

With the increase in mission to provide forensic services to law enforcement and intelligence agencies worldwide, adequate resources are not available to provide the research and development required by the forensic community



# Research and Development

## Best Practices: Research and Development

### FBI Laboratory

- Research Partners Program
- Visiting Scientist Program



# FBI LABORATORY

## Research and Development

With fewer resources to devote to R&D, the forensic community is lacking adequate resources to develop better, faster and cheaper forensic services



# FBI/Federal Laboratories

## Post 9/11 Mission


Forensic laboratories can be more efficient and effective with current resources

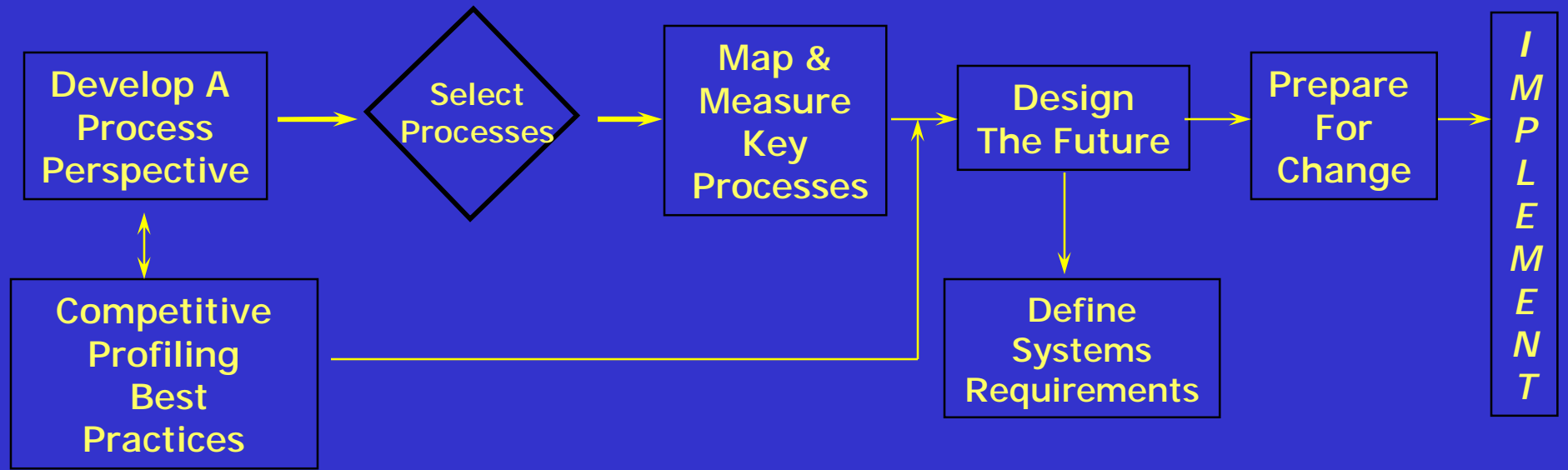
Best Practice: Business Process Re-engineering (BPR) efforts





# Business Process Re-engineering

Current State  Desired State



# FBI/Federal Laboratories

## Post 9/11 Mission

Forensic Laboratories can be more efficient and effective with increased emphasis on interoperability and optimal data sharing. Federal laboratories, with input from their partners, are uniquely positioned to facilitate interoperability and data sharing among the national and international forensic community.



# FBI/Federal Laboratories

Best Practice: Interoperability and optimal data sharing

## Combined DNA Index System (CODIS)

- Nearly 4 million Convicted Offender DNA profiles
- Over 153,00 forensic or unknown DNA profiles
- 40,263 Investigations Aided
- Over 350 Missing Person
- Over 2,200 Relatives of Missing Person DNA profiles
- Over 1,000 DNA profiles from Unidentified Human Remains



# FBI/Federal Laboratories

Best Practice: Interoperability and optimal data sharing

Combined DNA Index System (CODIS)

## PARTICIPANTS

- 178 Domestic Laboratories in all 50 states
- 40 International Laboratories in 26 countries



# FBI/Federal Laboratories

## Post 9/11 Mission

Forensic Laboratories have been asked to provide enhanced response capabilities, forensic analysis, research and development and training worldwide with little or no increase in resources



# FBI/Federal Laboratories

## Post 9/11 Mission

Additional personnel and funding resources are required to maximize the potential of forensic laboratories to assist in the prevention of crime and terrorism and provide optimal forensic services to law enforcement and intelligence agencies worldwide



A detective in a trench coat and cap is looking through a magnifying glass. The magnifying glass shows a glowing DNA double helix structure. The background is dark and textured.

THE END

*It's Elemental  
My Dear Watson.*