



National Defense Industrial Association Biometrics Conference Technology and Standards Panel 21 January 2010

DoD Forensic Science & Technology

Jeff Salyards

Program Manager, Science and Technology

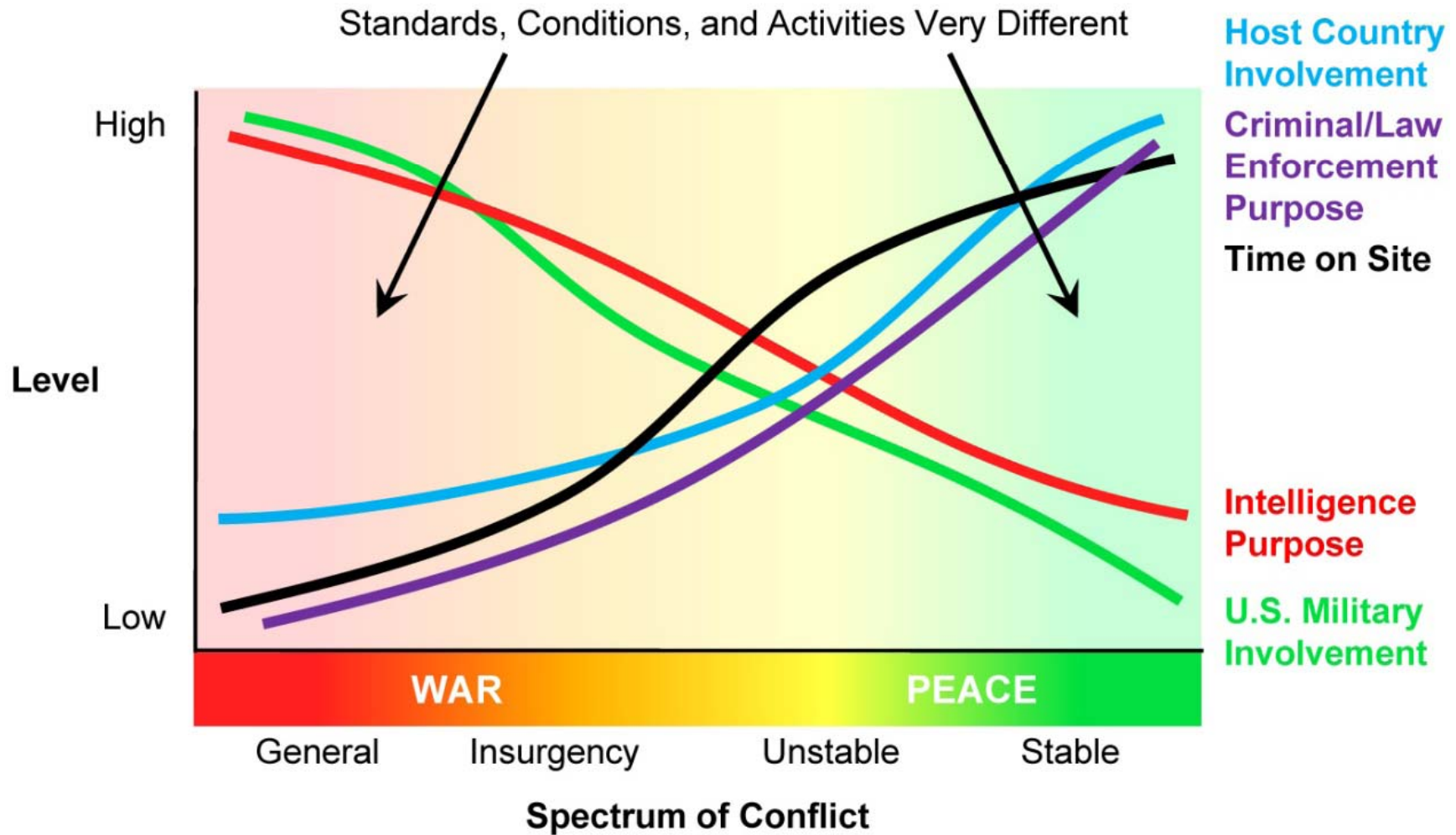
U.S. Army Criminal Investigation Laboratory

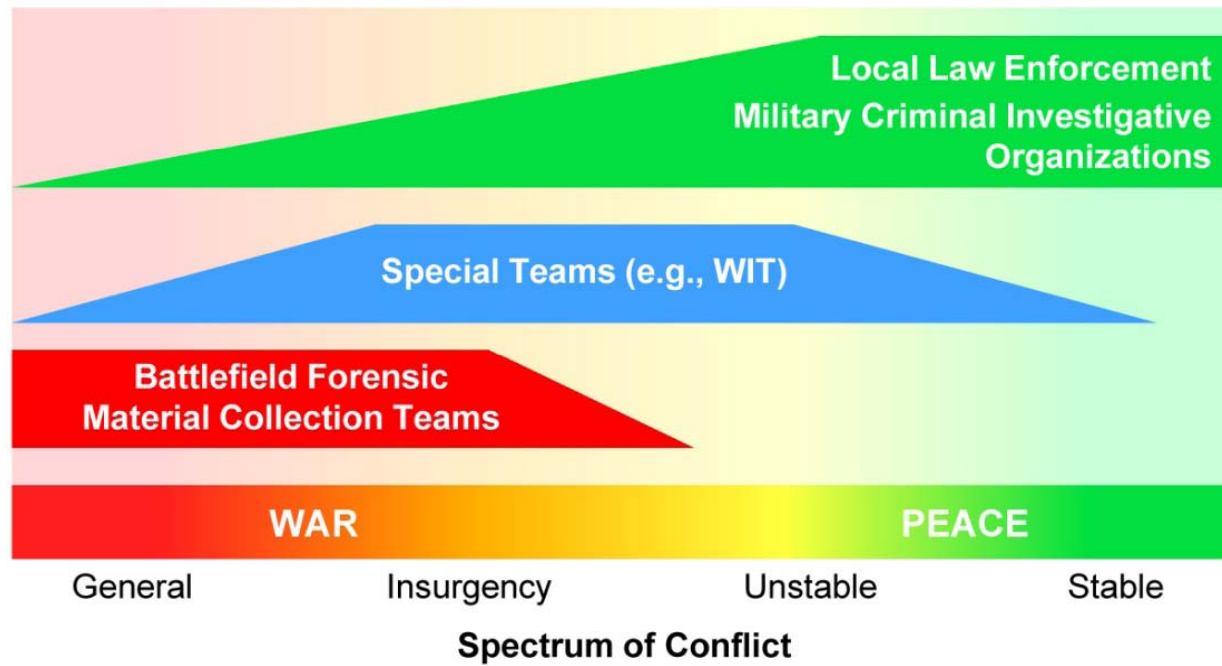
(404) 469-5569 (office)

jeff.salyards@us.army.mil



The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

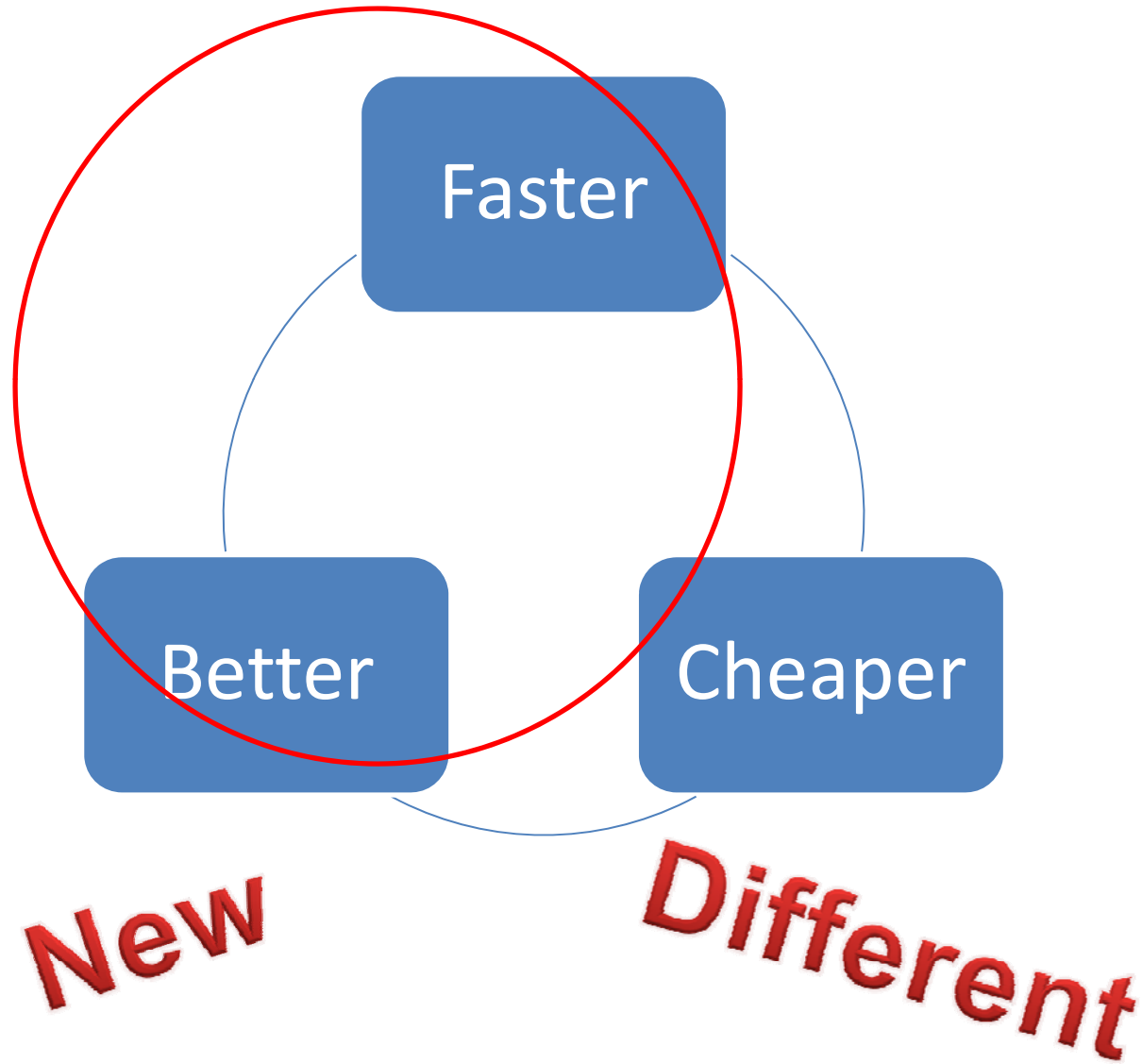






Roadmap

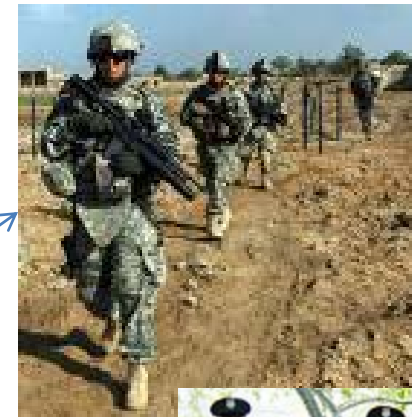
- Centralized vs Decentralized
 - Faster, Better, Cheaper
 - NAS Report
 - Managing Results
- Gaps
 - Existing DoD Projects
 - Future Projects





Better, Faster, Cheaper

Smaller, Rugged









NAS Report

STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES A PATH FORWARD

Committee on Identifying the Needs of the Forensic Science Community

Committee on Science, Technology, and Law Policy and Global Affairs

Committee on Applied and Theoretical Statistics

Division on Engineering and Physical Sciences

**NATIONAL RESEARCH COUNCIL *OF THE NATIONAL ACADEMIES*
THE NATIONAL ACADEMIES PRESS**

Washington, D.C.



NAS Report – Executive Summary



forensic **S**cience

forensic **\$**cience



NAS Report – S&T Summary

- **Recommendation 3 – NAS Report**
 - Establish validity of forensic methods
 - Determine estimates of uncertainty
 - Develop measures of reliability and accuracy
- **Recommendation 5 – NAS Report**
 - Investigate human observer bias
 - Identify sources of human error
 - Develop model protocols to minimize these errors
- **Recommendation 10 – NAS Report**
 - Support graduate education programs/fellowships
 - Emphasize multidisciplinary fields
 - Support continuing legal education programs



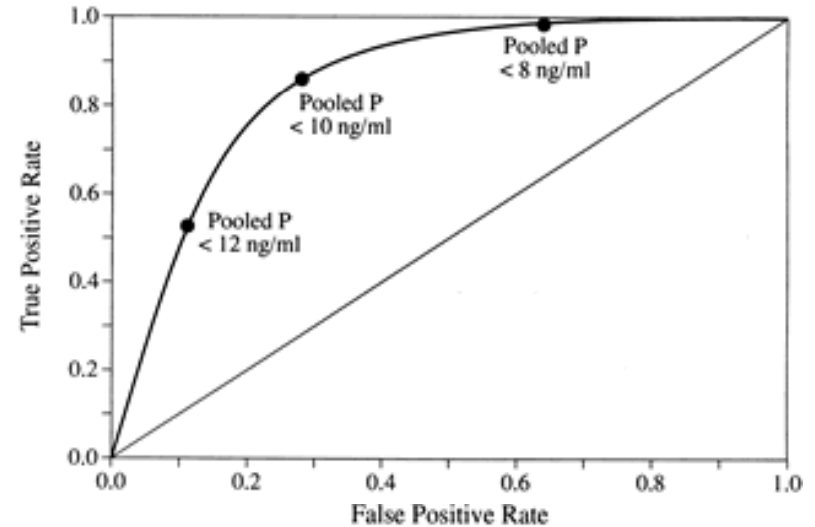
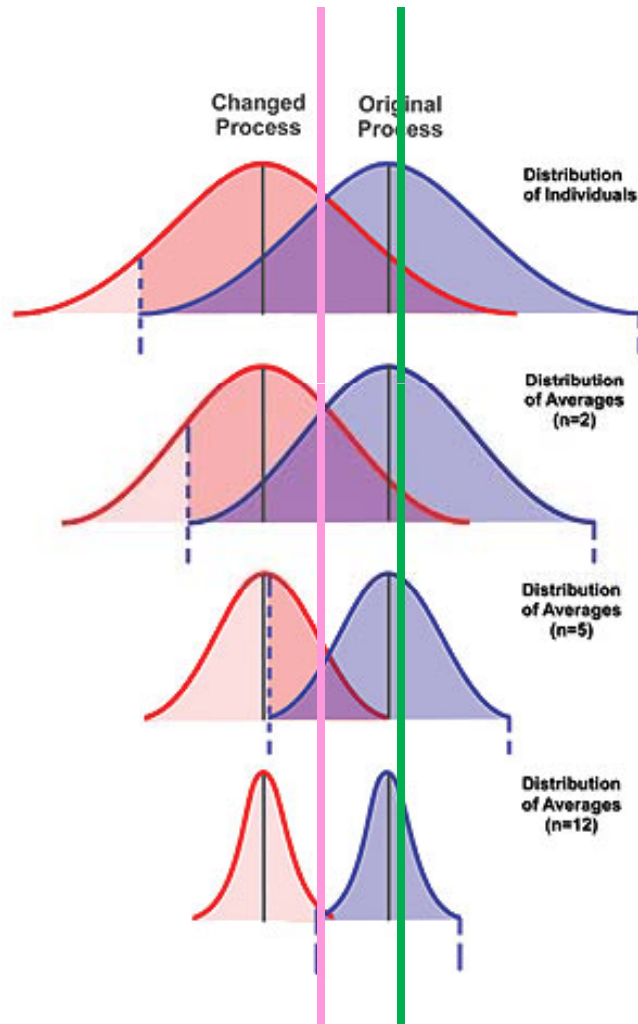
Recommendation 3 – NAS Report



Peer-reviewed research on uncertainty, accuracy and reliability



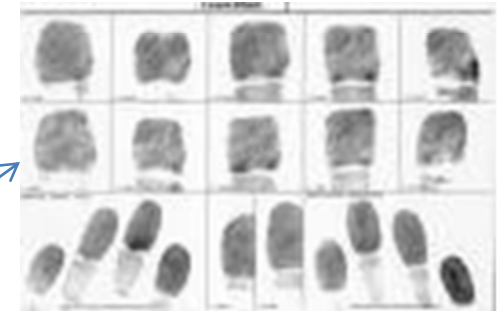
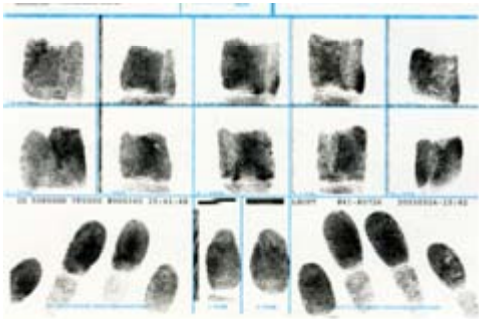
Recommendation 3 – NAS Report



Peer-reviewed research on uncertainty, accuracy and reliability



Recommendation 3 – NAS Report



Peer-reviewed research on the scientific basis & validity



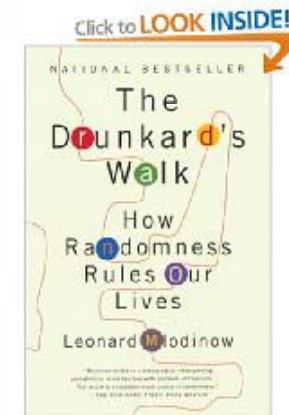
Wine Tasting



The Wine News, as quoted on wine.com "Dusty, chalky scents followed by mint, plum, tobacco and leather. Tasty cherry with smoky oak accents..."



The Wine Advocate, describes a wine as having "promising aromas of lavender, roasted herbs, blueberries, and black currants."







Forensics – Information Sharing





Forensics – Information Sharing

- Logical
- Technical

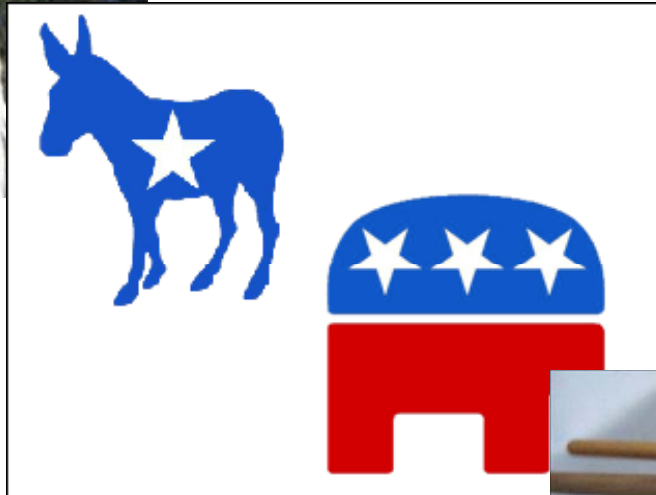
No.	File Name	Title	Artist	Album	Comments	Year
1	MP3 Rachmaninoff-10 Preludes, No 01 L	No. 1 in F sharp minor	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
2	MP3 Rachmaninoff-10 Preludes, No 02 L	Prelude No 2 in B flat major	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
3	MP3 Rachmaninoff-10 Preludes, No 03 L	Prelude No 3 in K minor	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
4	MP3 03x2	Prelude No 3 in C minor				
4	MP3 Rachmaninoff-10 Preludes, No 04 L	Prelude No 4 in D major	Rachmaninoff	added text	Vladimir Ashkenazy, Previn	1972
5	MP3 03x2				***Remove***	
5	MP3 Rachmaninoff-10 Preludes, No 05 L	Prelude No 5 in G minor	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
6	MP3 Rachmaninoff-10 Preludes, No 06 L	No. 6 in E flat major	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
7	MP3 03x2		Rachmaninoff			
7	MP3 Rachmaninoff-10 Preludes, No 07 L	Prelude No 7 in C minor	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
8	MP3 Rachmaninoff-10 Preludes, No 08 L	No. 8 in A flat major	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
9	MP3 03x2	No. 8 in A flat major				
9	MP3 Rachmaninoff-10 Preludes, No 09 L	No. 9 in E flat minor	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
10	MP3 Rachmaninoff-10 Preludes, No 10 L	No. 10 in G flat major	Rachmaninoff	10 Preludes, op. 23	Vladimir Ashkenazy, Previn	1972
11	MP3 Rachmaninoff-13 Preludes, No 01 L	No. 1 in C major	Rachmaninoff	13 Preludes, op. 32	Vladimir Ashkenazy	1972
12	MP3 03x2				***Hidden***	
12	MP3 Rachmaninoff-13 Preludes, No 02 L	Prelude No 2 in B flat minor	Rachmaninoff	13 Preludes, op. 32	Vladimir Ashkenazy	1972
13	MP3 Rachmaninoff-13 Preludes, No 03 L	No. 3 in E major	Rachmaninoff	13 Preludes, op. 32	Vladimir Ashkenazy	1972
14	MP3 Rachmaninoff-13 Preludes, No 04 L	No. 4 in E minor	Rachmaninoff	13 Preludes, op. 32	Vladimir Ashkenazy	1972



HOW MUCH IS NEEDED, AND HOW MUCH IS IT WORTH?



PERSONALITY



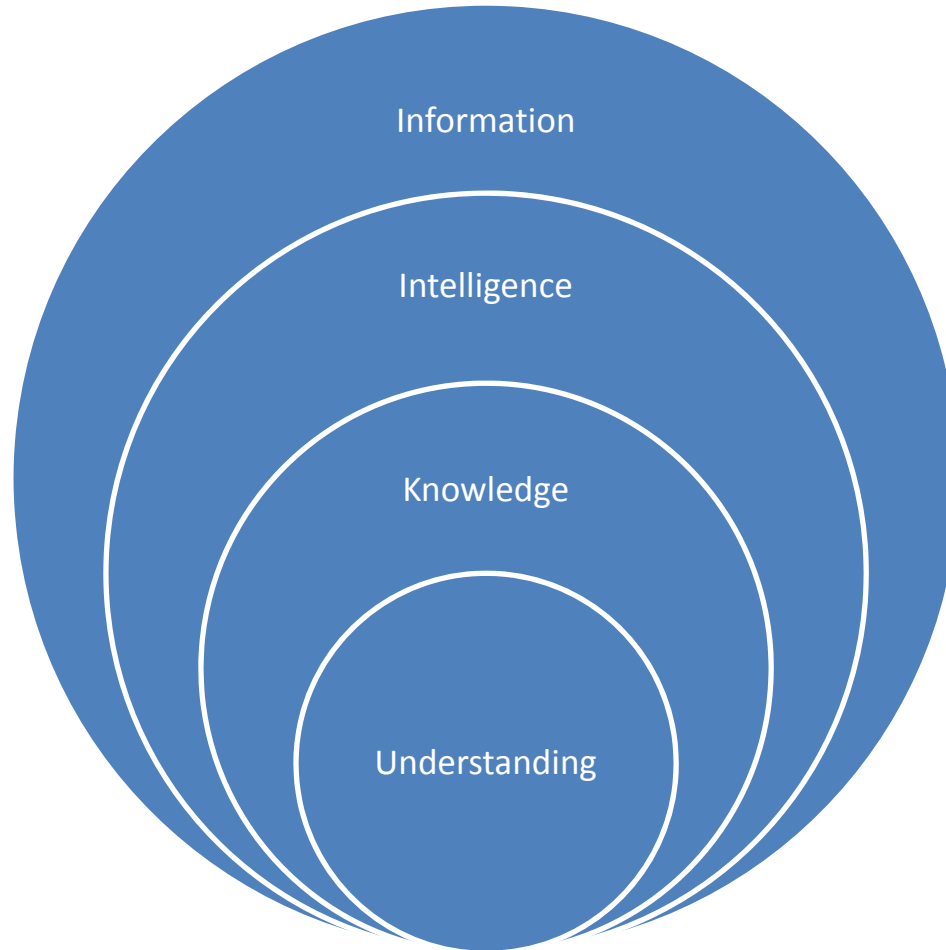
POLITICS



RICE BOWLS

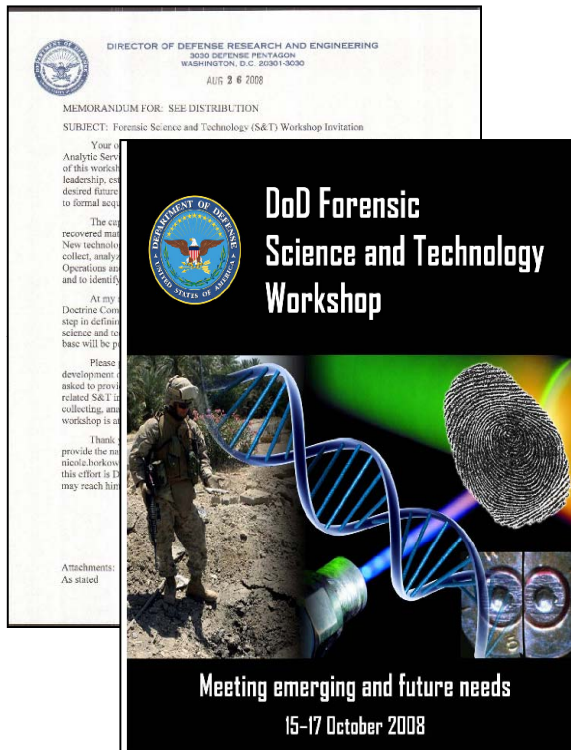


Forensics – Information Sharing





Forensic S&T Workshop



- Engage DOD & interagency leadership
- Establish an S&T baseline for the forensic program
- Map the baseline to desired future capabilities
- Enable a DOD S&T roadmap that defines transition paths to formal acquisition programs

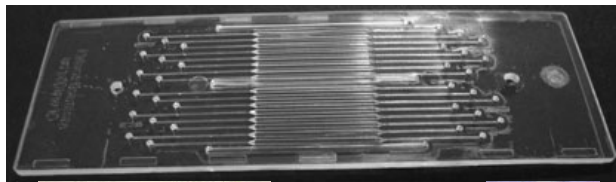
Outcome

- **25 findings and 34 recommendation**
 - **Identified forensic S&T gaps**
 - **Stand up a Forensic S&T Working Group to address forensics issues and gaps across the community**

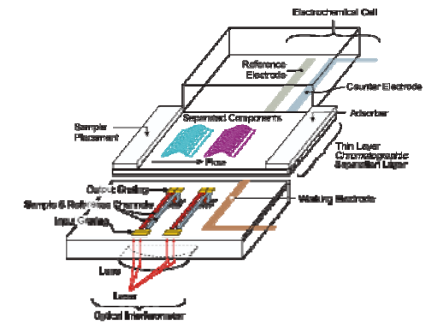
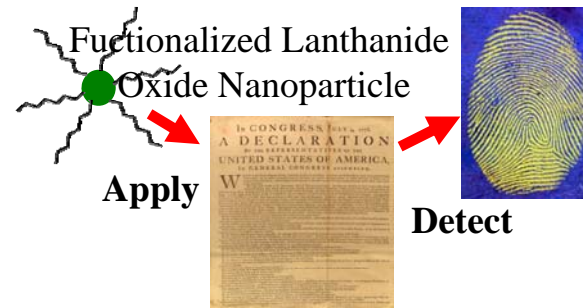


DoD Forensic S&T Current Projects

ANDE

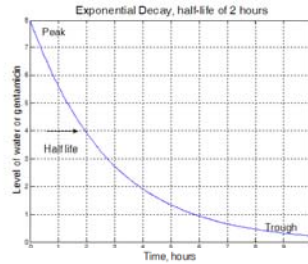


A Single Kit to Screen for Explosives, Drugs, and GSR in the field





DoD Forensic S&T Future Projects



Man eats underwear to beat breathalyzer

By D'ARCY RICKARD of The Advocate.
 STETTLER — An 18-year-old Stettler man tried to eat his underwear in the hope that the cotton fabric would absorb alcohol before he took a breathalyzer test, provincial court heard this week.

David Zurfluh was subsequently acquitted of a charge of impaired driving because he blew .08, the legal limit.

But the testimony broke up people in Judge David MacNaughton's provincial court here Thursday afternoon.

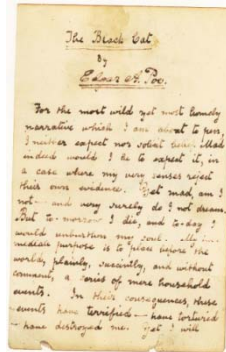
Mr. Zurfluh was collared by RCMP Const. Bill Robinson after he ran from his vehicle, which had been seen weaving down the highway.

While sitting in the back of the patrol car, Mr. Zurfluh tried to eat his shorts, Const. Robinson told the court.

Mr. Zurfluh said he ripped the crotch out of his shorts, stuffed the fabric in his mouth and then spit it out.

A class of law students from William E. Hay Composite High, in court as observers,

was removed by the teacher when testimony enlivened the proceedings. The Grade 11 and 12 students had difficulty maintaining composure.
 "People were leaving the courtroom with tears in their eyes, trying not to laugh," said RCMP Const. Peter McFarlane.



Helen Sweeney

Helen Sweeney



DoD Forensic S&T Future Questions

- Age of _____?
- _____ instead of DNA?
- _____ to find Gun Shot Residue?
- _____ instead of CODIS, IAFIS, NIBN, ...?
- \pm ___ and error rate = ___ instead of match, consistent with, etc
- _____ in min, secs instead of days, weeks, months?



Summary

- ✓ Centralized vs Decentralized
 - ✓ Faster, Better, Cheaper
 - ✓ NAS Report
 - ✓ Managing Results
- ✓ Gaps
 - ✓ Existing DoD Projects
 - ✓ Future Projects







National Defense Industrial Association Biometrics Conference Technology and Standards Panel 21 January 2010

DoD Forensic Science & Technology

Jeff Salyards

Program Manager, Science and Technology

U.S. Army Criminal Investigation Laboratory

(404) 469-5569 (office)

jeff.salyards@us.army.mil