Fingerprint Identification: The Role of Research in Fortifying the Forensic Sciences

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Komarinski Credentials

- Over 25 Years AFIS Experience
- Testifying Expert Witness
- Chair, AFIS Committee, International Assoc for Identification
- Author, *Automated Fingerprint Identification Systems (AFIS)*
- AFIS Lecturer, Writer and Consultant
AFIS - What is it?

- Uses finger image features such as:
  - Ridge endings
  - Bifurcations ("splits")
  - Islands
  - Direction of ridge flow

- Compares these image features of print in question to image features of enrolled prints in database

- May interface with CCH (Computerized Criminal History) to produce Rap sheet
Minutiae & Ridge Flow
i.e. Image Features
How do we share AFIS?

Tenprint Applications
- Arrest
- Job Applications
- Other uses (e.g. SAFE Child; Inmate reception)
- Search FBI IAFIS

Latent Print Applications
- Access to other databases very limited
- Interoperability
Current AFIS Challenges

**Lack of Forensic Interoperability**
- Not all Forensic AFIS systems intercommunicate

**Erosion of AFIS Experienced Personnel**
- Reliance on computers, not people to do job
- Maintenance and upgrades require people
- Need to direct growth, not be lead by industry interests

**Expanded Use**
- More groups being fingerprinted
- Printed as “Search and Retain” i.e., record kept
Emerging techniques

- Fast Capture Devices
- Extended Fingerprint Feature Set
- Lights Out for Tenprint Applications
- Major Case (Palm) Prints
- Multi-modal identification
Latent Print Interoperability Challenges

Technical
- Different Systems
- Different Platforms

Administrative
- New Procedures
- Record Keeping

Funding
- Revenue stream
- Value of this program over other programs

Legal
- MOU’s
- Hold Harmless

Political
- Willingness to share
- Mutually beneficial
We Don’t Know What We Don’t Know

- Need to follow a business model
- Little research in AFIS latent print area
- Make the technology work for us
- Uniformity in data collection
- “We will give them what they ask for”, but what do they ask for?
- Diminished number of examiners
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