Priority Action Report

Friction Ridge Subcommittee

SAC Physics/Pattern

Henry Swofford, Chair

August 1, 2018

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

Subcommittee Leadership

- **Chair:** Henry Swofford
  - Defense Forensic Science Center
  - Term expiration September 30, 2020
  - Email: Henry.J.Swofford.Civ@mail.mil

- **Vice Chair:** Thomas Wortman
  - Defense Forensic Science Center
  - Term expiration September 30, 2018
  - Email: Thomas.M.Wortman.Civ@mail.mil

- **Executive Secretary:** Maria Ruggiero
  - Los Angeles County Sheriff's Office
  - Term expiration September 30, 2019
  - Email: mcruggie@lasd.org

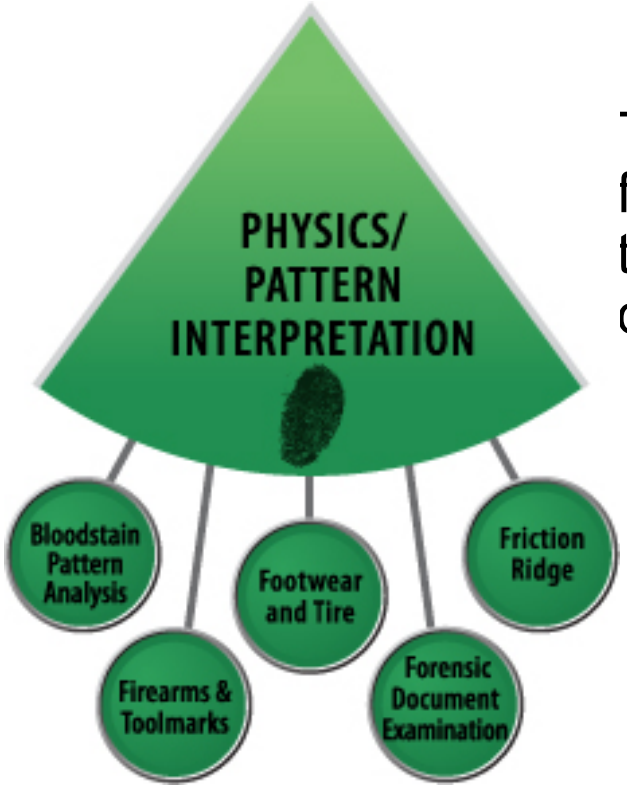
Subcommittee Membership

• Black, John P.	Black & White Forensics, LLC	2018	john@bwforensics.com
• Brock, Steven	Santa Clara County Sheriff's Office	2018	Steve.Brock@shf.sccgov.org
• Connelly, Joshua	Douglas County Sheriff	2019	joshua.connelly@douglascounty-ne.gov
• Eldridge, Heidi	RTI	2019	heidi.eldridge@icloud.com
• Fontaine, Liz	FBI Laboratory	2020	ekfontaine@fbi.gov
• French, Michael, K.	MorphoTrak, LLC	2018	michael.french@idemia.com
• German, Edward R.	Macon County Sheriff's Office	2018	ed.german@sheriff-macon-il.us
• Hall, Carey	Minnesota Bureau of Criminal Apprehension	2019	carey.hall@state.mn.us
• Hornickel, Mandi	Illinois State Police	2020	Mandi_hornickel@isp.state.il.us
• Kriel, Louis	Georgia Bureau of Investigation	2020	louis.kriel@gbi.ga.gov
• Lavine, Michael	Umass Amhearst	2020	lavine@math.umass.edu
• Ruggiero, Maria C.	Los Angeles County Sheriff's Department	2019	mcruggie@lasd.org
• Schwarz, Matthew T.	Schwarz Forensic Enterprises, Inc.	2019	matt@schwarzforensic.com
• Smith, Ron	Ron Smith & Associates, Inc.	2020	ron@ronsmithandassociates.com
• Speckels, Carl	City of Phoenix Crime Laboratory	2020	carl.speckels@phoenix.gov
• Swofford, Henry J.	Defense Forensic Science Center	2020	Henry.j.Swofford.civ@mail.mil
• Tabassi, Elham	National Institute of Standards and Technology	2018	elham.tabassi@nist.gov
• White, Alice	Evolve Forensics, LLC	2020	alicevirginiawhite@gmail.com
• Wortman, Thomas M.	Defense Forensic Science Center	2018	thomas.m.wortman.civ@mail.mil
• Zinn, Lisa M.	Orange County Sheriff's Crime Laboratory	2019	lzinn@occl.ocgov.com

Subcommittee Breakdown

Category	Target	-	Current	-
Practitioner Total	14	70%	17	85%
Federal	4	20%	3	15%
State and Local	6	30%	9	45%
Civil and Other	4	20%	4	20%
Researchers and Scientists	4	20%	3	15%
R&D Technology	2	10%	1	5%

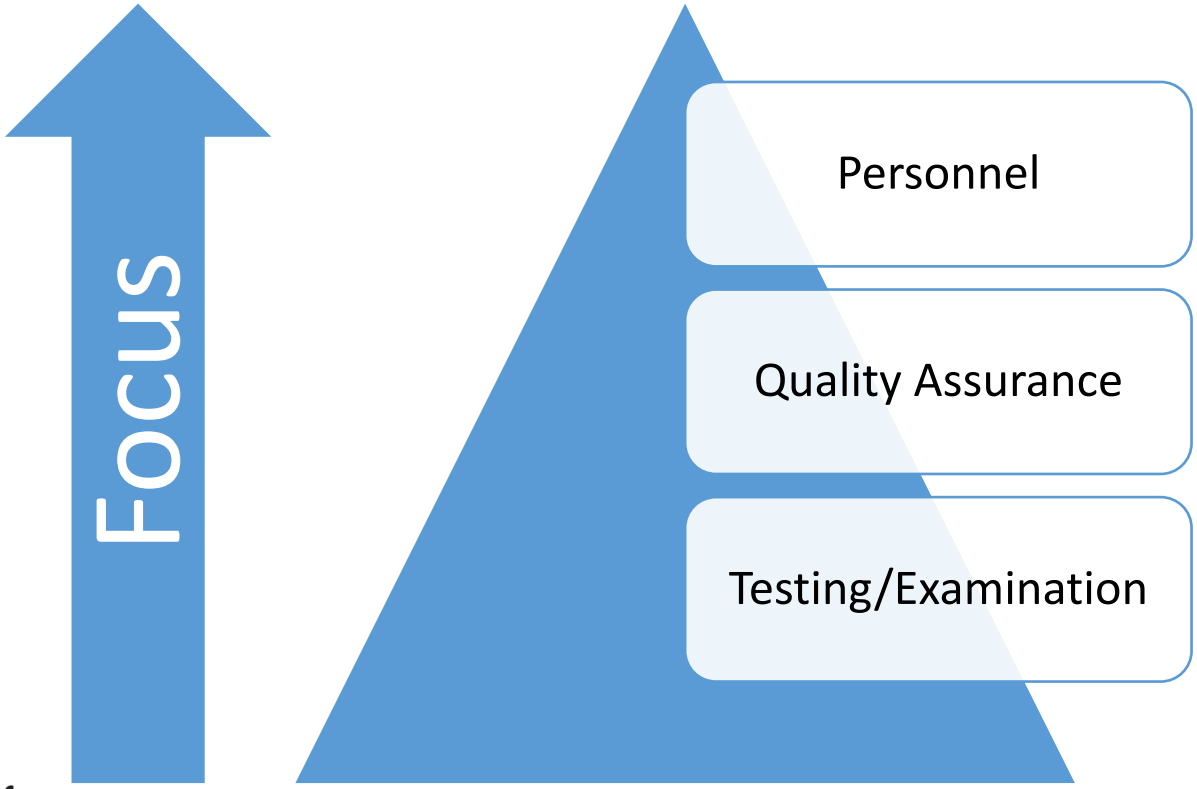
Scope



The Friction Ridge Subcommittee will focus on standards and guidelines related to the forensic examination of friction ridge detail from the hands and feet.

Roadmap

- *Current* Strategic Priority:
  - Promulgation of standards and guidelines related to the **examination**, **interpretation**, and **reporting** of friction ridge evidence



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Documents Completed (at SDO)

✓Standard for Friction Ridge Examination Conclusions

✓ Standard for Friction Ridge Examination Training

✓Guideline for the Articulation of the Decision-Making Process Leading to an Expert Opinion of Source Identification in Friction Ridge Examinations

- Document drafts publically available online:
  - https://www.nist.gov/topics/forensic-science/friction-ridge-subcommittee

Update → Standard for Conclusions

- Defines terms and qualitative expressions of source conclusions that may be reached following friction ridge comparisons.

- Five conclusion scale
  - Source Exclusion
  - Support for different sources
  - Inconclusive/Lacking Support
  - Support for same source
  - Source Identification

- Source Identification:
  - Strongest degree of association between two friction ridge impressions
  - Expressed as a “strength of evidence” statement

Update → Standard for Conclusions

- **Source Identification**: The strongest degree of association between two friction ridge impressions. It is the conclusion that the observations provide extremely strong support for the proposition that the impressions originated from the same source and extremely weak support for the proposition that the impressions originated from different sources.

- Source Identification is reached when the friction ridge impressions have corresponding ridge detail and the examiner would not expect to see the same arrangement of details repeated in an impression that came from a different source.

- **Qualifications & Limitations**: An examiner shall not assert that a source identification is the conclusion that two impressions were made by the same source or imply an individualization to the exclusion of all other sources.

Documents in Progress

- Examination Method
  - Analysis
  - Comparison/Evaluation
- Consultation
- Verification
- Technical Review
- Reporting Results
- Conflict Resolution
- ACE-V Process Map
- ABIS Best Practices
- Terminology

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Current Research Needs

- ACE-V Bias
- Assessing the Sufficiency and Strength of Friction Ridge Features
- Close Non-Match Assessment
- Examiner Consistency During Friction Ridge Feature Mark-Up
- Friction Ridge Statistical Modeling
- Latent Fingerprint Image Quality Usage

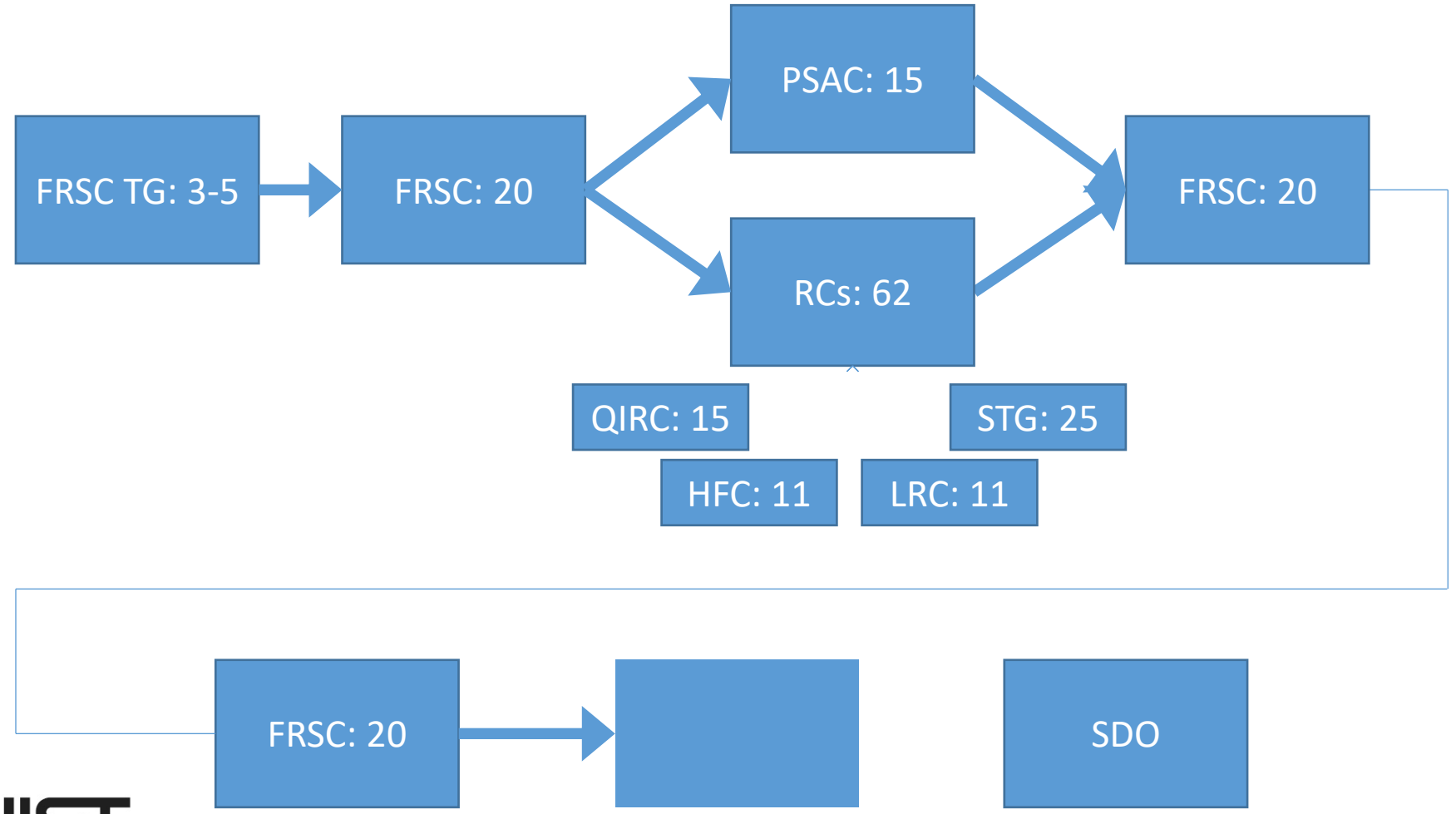
- Research needs publically available online:
  - https://www.nist.gov/topics/forensic-science/osac-research-development-needs

Additional Items of Interest

- ✓ OSAC FRS Response to PCAST
- ✓ OSAC FRS Response to the DoJ Proposed Uniform Language for Testimony and Reports
- ✓ OSAC FRS Response to the DoJ Forensic Science Discipline Reviews
- ✓ Discipline-Specific Baseline Documents (i.e. legacy SWGFAST documents)

- Documents publically available online:
  - https://www.nist.gov/topics/forensic-science/friction-ridge-subcommittee

General Process



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