OSAC

Organization of Scientific Area Committees for Forensic Science

Physics/Pattern Interpretation Scientific Area Committee

Melissa Gische, Chair

Physics / Pattern Interpretation SAC Leadership

Melissa Gische, Chair, U.S. Federal Bureau of Investigation

Lesley Hammer, Vice Chair, Hammer Forensics

Thomas Busey, Ph.D., Executive Secretary, Indiana University, Bloomington

Michael Gorn, Chair, Footwear and Tire, Federal Bureau of Investigation

Gerald LaPorte, Chair, Forensic Document Examination National Institute of Justice

Henry Swofford, Chair, Friction Ridge, HJS Consulting, LLC

Todd Weller, Chair, Firearms and Toolmarks Oakland Police Department, Criminalistics Laboratory

Toby L. Wolson, Chair, Bloodstain Pattern Analysis, Noslow Forensic Consultations, LLC

Physics / Pattern Interpretation SAC Members and Liaisons

David Baldwin, Ph.D., Special Technologies Laboratory; Division of Mission Support and Test Services, Nevada National Security Site

Ted Burkes, FBI Laboratory

Paul Kish, Paul Erwin Kish Forensic Consultant & Associates, Corning, N.Y.

Glenn Langenburg, Ph.D., Elite Forensic Services, LLC

Hal Stern, Ph.D., University of California, Irvine

David A. Stoney, Ph.D., Stoney Forensic, Inc., Chantily, VA

John R. Vanderkolk, Indiana State Police Laboratory

Richard Lempert, Ph.D., Eric Stein Distinguished University Professor of Law & Sociology, emeritus, Self-employed (HFC)

Jules Epstein, Professor, Temple Beasley School of Law (LRC)

Jason Bundy, Forensic Quality Manager, Florida Department of Law Enforcement (QIC)

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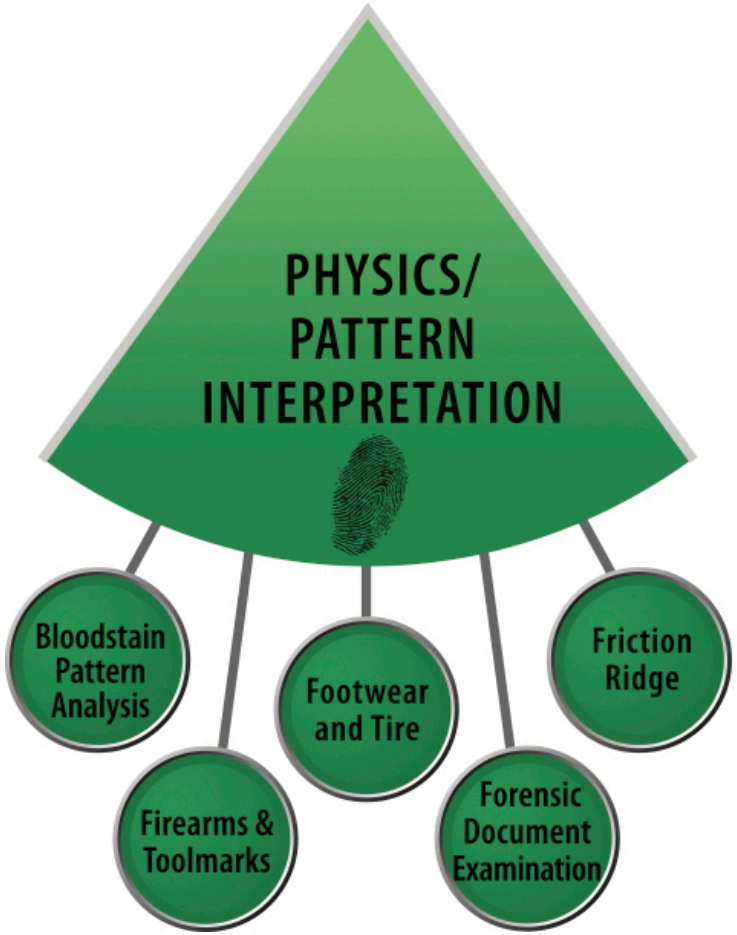
PSAC Subcommittees

- **BPA** – Bloodstain Pattern Analysis
- **FATM** – Firearms and Toolmarks
- **FDE** – Forensic Document Examination
- **FR** – Friction Ridge
- **FWT** – Footwear and Tire

AAFS Standards Board (ASB)

Physics/Pattern Interpretation SAC subcommittees use the AAFS Standards Board (ASB) as the Standards Development Organization (SDO) for completed documents. The ASB has three types of documents.

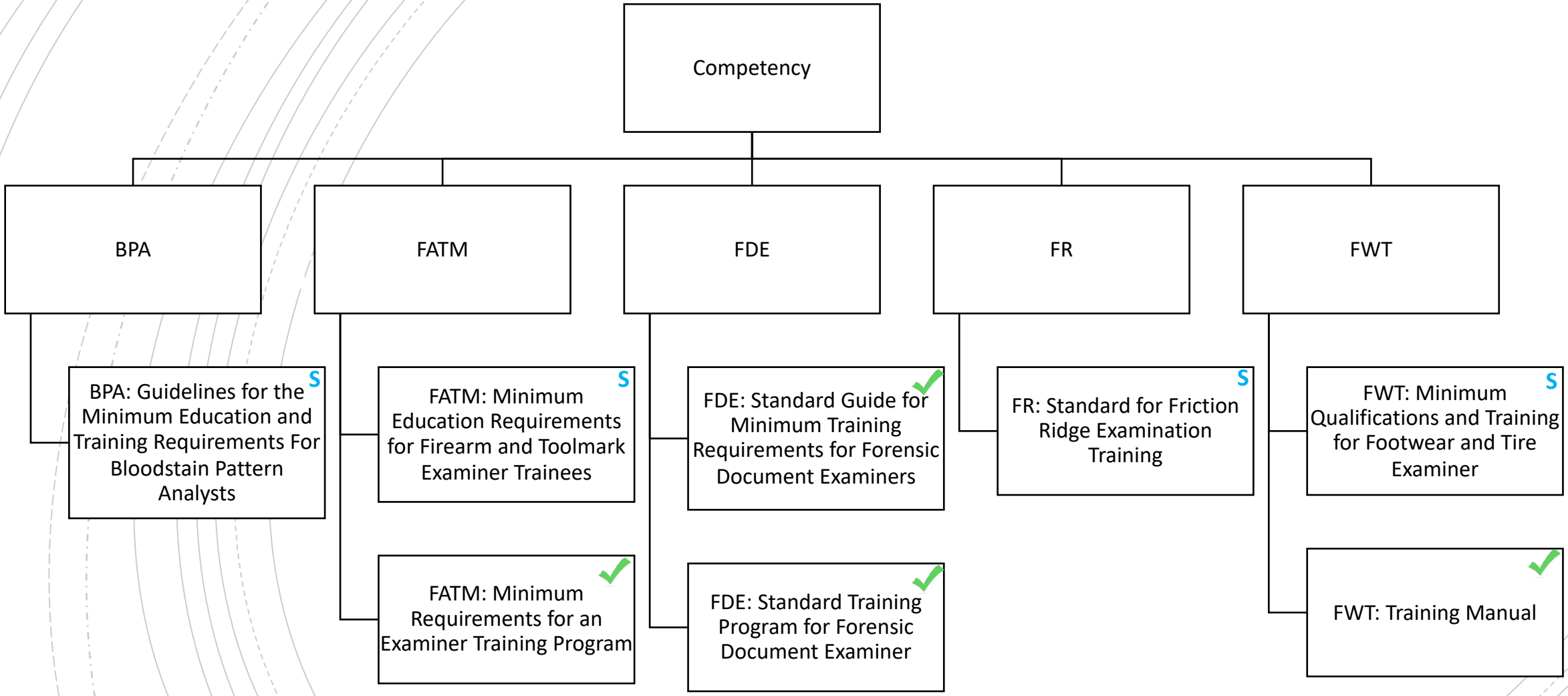
- Standards (S)
- Technical Reports (TR)
- Best Practice Recommendations (BPR)



SAC Role

- Provide direction and oversight for 5 subcommittees
- Interface with the resource committees
- Communicate activities, progress, recommendations
- Review and approve standards, best practice recommendations, and technical reports

Part of roadmap for PSAC



Standards approved by ASB

BPA: ANSI/ASB TR 033: Terms and Definitions in Bloodstain Pattern Analysis, First Edition, 2017

BPA: ANSI/ASB STD 072: Standard for the Validation of Procedures in Bloodstain Pattern Analysis, First Edition, 2019

Standards in Process – at ASB

BPA: ASB BPR 031: Guidelines for Report Writing in Bloodstain Pattern Analysis

BPA: ASB STD 032: Standard for Minimum Training and Education Requirements for Bloodstain Pattern Analysts

BPA: ASB STD 030: Standard for a Quality Assurance Program in Bloodstain Pattern Analysis

Standards in Process – at ASB

FATM: ASB STD 062: Standard for Topography Comparison Software for Firearm and Toolmark Analysis

FATM: ASB STD 063: Implementation of 3D Technologies in Forensic Firearm and Toolmark Comparison Laboratories

FATM: ASB STD 061: Firearms and Toolmarks 3D Measurement Systems and Measurement Quality Control

FATM: ASB BPR 060: Guidelines for Barrel and Overall Length Measurements for Firearms

FATM: ASB BPR 068: Safe Handling of Firearms and Ammunition

FATM: ASB STD 105: Minimum Education Requirements for Firearm and Toolmark Examiner Trainees

FATM: ASB STD 093: Test Method for the Examination and Testing of Firearms

FATM: ASB STD 100: Range of Conclusions and Criteria in Toolmark Examination

Public Comment →

FATM: ASB BPR 068: *Safe Handling of Firearms and Ammunition*, First Edition (comment deadline, July 8, 2019)

Standards in Process – at ASB

FDE: ASB STD 011: Scope of Expertise in Forensic Document Examination

FDE: ASB STD 044: Standard for the Examination of Documents for Indentations

FDE: ASB STD 035: Standard for the Examination of Documents for Alterations

FDE: ASB TR 071: Forensic Document Examination Terms and Definitions

Standards in Process – at ASB

FR: ASB BPR 012: Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examinations

FR: ASB STD 013: Standard for Friction Ridge Examination Conclusions

FR: ASB STD 014: Standard for Friction Ridge Examination Training Program

Public Comment →

FR: ASB BPR 012: *Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examinations*, First Edition (comment deadline, July 8, 2019)

Standards in Process – at ASB

FWT: ASB BPR 021: Best Practices for the Preparation of Test Impressions from Footwear and Tires

FWT: ASB STD 099: Standard for Footwear/Tire Examination Proficiency Testing Program

FWT: ASB STD 095: Standard for Minimum Qualifications and Training for a Footwear/Tire Forensic Science Service Provider

FWT: ASB TR 097: Terminology Used for Forensic Footwear and Tire Evidence

Standards in Process – Under Development

BPA: Conclusion statements for bloodstain pattern identifications

BPA: Conclusion statements for BPA reconstructions

BPA: BPA taxonomy for use in classification of bloodstain patterns

BPA: Guidelines for a BPA Certification Program

BPA: Guidelines for Developing Standard Operating Procedures for Bloodstain Pattern Analysis

BPA: Guidelines for Proficiency Testing in Bloodstain Pattern Analysis

BPA: BPA process map

Standards in Process – Under Development

FATM: Minimum Requirements for an Examiner Training Program

FATM: STD 096: Standard Test Method for the Examination and Testing of Ammunition

FATM: ASB STD 101: Standard for Supporting Documentation of Source Conclusions in Toolmark Examinations

FATM: ASB BPR 102: Guidelines for Peer Review of Source Conclusions in Toolmark Examinations

FATM: ASB BPR 103: Guidelines for Reporting of Source Conclusions in Toolmark Examinations

FATM: ASB STD 104: Standard for 3D Virtual Comparison Microscopy for Firearm and Toolmark Analysis

FATM: ASB BPR 107: Best Practice Recommendation for Measuring Trigger Pull of a Firearm and Estimating Its Uncertainty

Standards in Process – Under Development

FDE: ASB STD 070: Standard for Examination of Handwritten Items

FDE: Standard Guide for Minimum Training Requirements for Forensic Document Examiners (Standard Training Program for Forensic Document Examiners)

FDE: Standard for Source Conclusions

FDE: Forensic Document Examination Bibliography

FDE: Standard for Collection of Known Writing

FDE: Standard for Initial Assessment of Questioned Document Evidence

FDE: Standard for the Examination of Writing Inks

FDE: Non-destructive Examination of Paper

FDE: Examination of Documents Produced with Liquid Ink Jet Technology

FDE: Examination of Documents Produced with Toner Technology

FDE: Examination of Typewritten Items

FDE: Standard for the Examination of Rubber Stamp and Stamped Impressions

FDE: Standard for the Examination of Dry Seals and Dry Seal Impressions

FDE: Examination of Financial, Identification, and Other Authorized Documents

FDE: Standard for the Examination of Charred Documents

FDE: Standard for the Examination of Liquid Soaked Documents

Standards in Process – Under Development

FR: ACE-V Process Map

FR: Examination Method

FR: Verification

FR: Technical Review

FR: Terminology

FR: AFIS Best Practices

FR: Conflict Resolution

FR: Consultation

FR: Reporting Results

Standards in Process – Under Development

FWT: Chemical Enhancements of Footwear and Tire Impressions

FWT: ASB BPR 052: Best Practice Recommendation for the Detection of Footwear and Tire Impression Evidence

FWT: ASB TR 051: Scope of Work for a Footwear/Tire Examiner

FWT: Articulation of Conclusions in Footwear and Tire Report Writing and Testimony

FWT: ASB BPR 049: Best Practice Recommendation for the Lifting of Footwear and Tire Impression Evidence

FWT: ASB BPR 050: Best Practice Recommendation for Photographic Documentation of Footwear and Tire Impression Evidence

FWT: Guide for the Casting of Footwear and Tire Impression Evidence at the Crime Scene

Research Needs

Bloodstain Pattern Analysis:

- Behavior of Blood Outside the Body
- Bloodstain Pattern Classification
- Examiner Reliability Study: Black and White Box Studies on Bloodstain Pattern Analysts
- Interaction of Blood and Fabrics

Research Needs

Firearms and Toolmarks:

- Assessment of Examiners' Toolmark Categorization Accuracy
- Blind Verifications Needs Assessment
- Cognitive Bias: To What Extent Does It Affect Firearm and Toolmark Comparison Outcomes
- Consistency of Examiner Evaluation of Distance Determination GSR Patterns
- Effect of New Technology on Quantitative Consecutive Matching Striae ID Criteria
- Evaluation of Examiner Conclusions Utilizing a Five-Point Scale
- Resolution Requirements for 3D Virtual Comparison Microscopy
- Study to Assess the Accuracy and Reliability of Firearms and Toolmark Examinations

Research Needs

Footwear and Tire:

- Examiner Reliability Study: Black/White Box Study on Footwear and Tire Examiners
- National Footwear Database/Reference Collection
- Population Frequency of Class Characteristics: Footwear in the United States
- Probability of Randomly Acquired Characteristics
- Testing & Validation of 3D Imaging Technologies for Footwear & Tire Impressions Evidence

Research Needs

Forensic Document Examination:

- Comparability and Complexity in Handwriting
- Hand Printing Complexity and Comparability
- National Database of Handwriting
- Validation of Conclusion Scale

Research Needs

Friction Ridge:

- 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

OSAC

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Thank you

https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science