

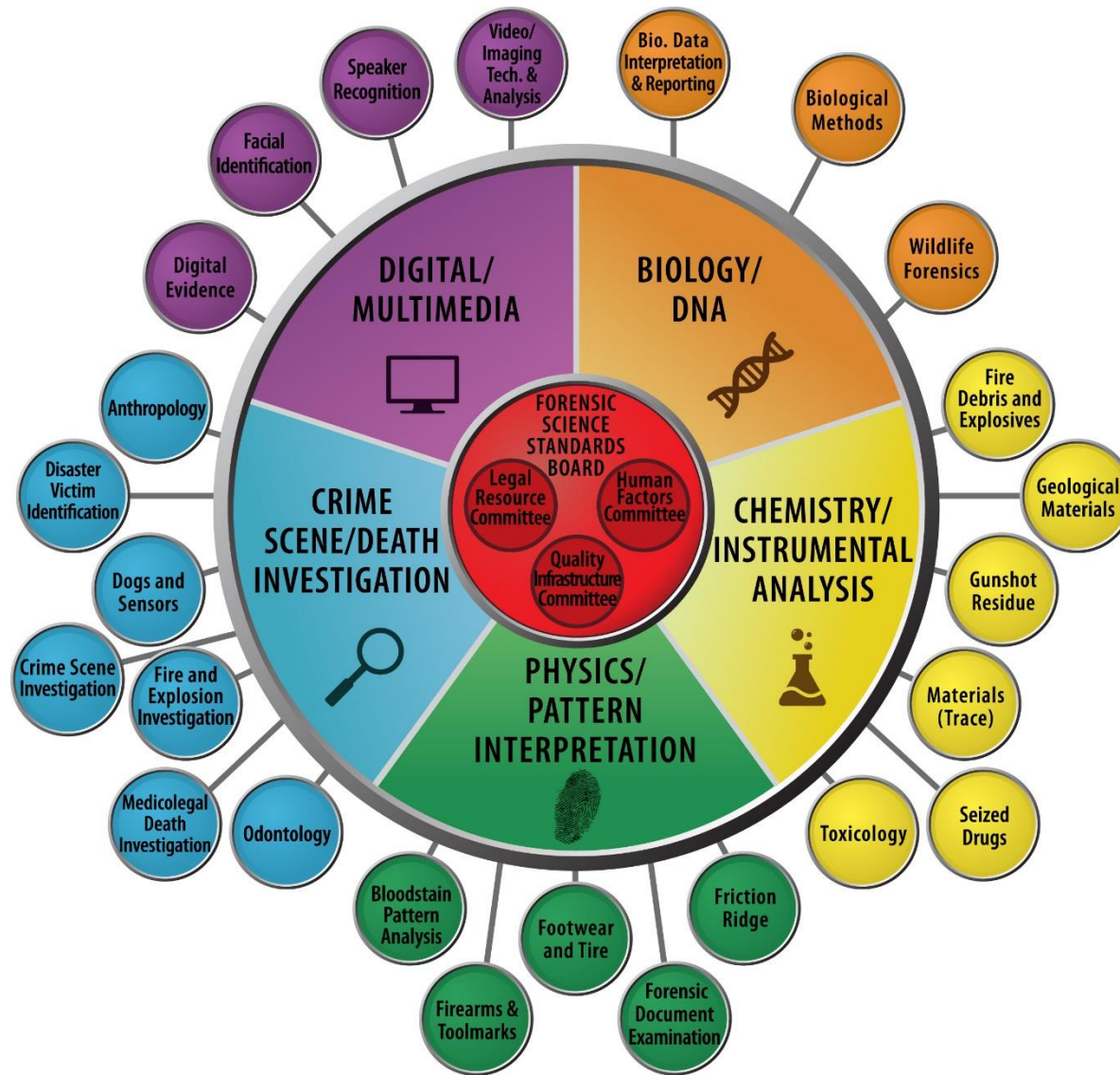


Priority Action Report

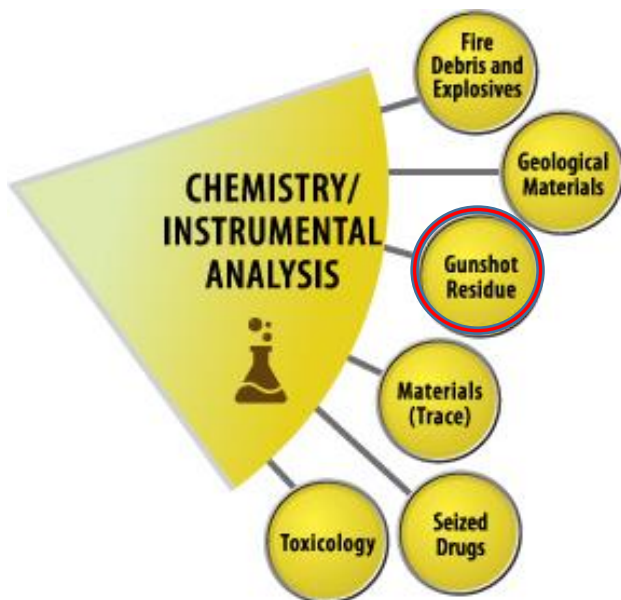
Gunshot Residue (GSR) Subcommittee

Chemistry/Instrumental Analysis SAC
Michael V. Martinez Subcommittee Chair
February 23, 2016





Gunshot Residue (GSR) Subcommittee



- The OSAC Subcommittee on Gunshot Residue will focus on standards and guidelines related to analyses of evidence that results from the deposition of or physical transfer of small or minute quantities of gunshot residue.

Gunshot Residue (GSR) Subcommittee





Gunshot Residue (GSR) Subcommittee Leadership

Position	Name	Organization	Term	Email
Chair	Michael V. Martinez	Bexar Co. Criminal Investigation Laboratory	4	mmartinez@bexar.org
Vice Chair	Carol Crowe	Colorado Bureau of Investigation (CBI)	3	carol.crowe@state.co.us
Executive Secretary	Matney Wyatt	U.S. Army Criminal Investigation Laboratory	4	john.m.wyatt20.civ@mail.mil



Gunshot Residue (GSR) Subcommittee Members



#	First	Last	Organization	Term	Email
1	Michael	Trimpe	Hamilton Co. Coroners Lab	2	trimpegolf@gmail.com
2	Wayne	Niemeyer	McCrone Associates	3	wniemeyer@mccrone.com
3	Debra	Gibson	LA Co. ME	2	dgibson@coroner.lacounty.gov
4	Doug	DeGaetano	Virginia Dept. of Forensic Science	3	Doug.DeGaetano@dfs.virginia.gov
5	James	Garcia	US Army Crime Lab	3	james.d.garcia1.civ@mail.mil
6	Koren	Powers	West Virginia Sate Forensic Lab	4	koren.k.powers@wvsp.gov
7	Nicholas	Ritchie	NIST	4	nicholas.ritchie@nist.gov
8	David	Freehling	North Carolina St. Crime Lab	2	Dfreehling@ncdoj.gov
9	Frank	Platek	US FDA	2	Frank.Platek@fda.hhs.gov
10	Suzanne	Bell	West Virginia University	2	Suzanne.Bell@mail.wvu.edu
11	Rodney	Simmons	Wyoming State Crime Lab	4	rodney.simmons@wyo.gov
12	Thomas	White	Texas DPS	3	Thomas.White@dps.texas.gov
13	Robert	Berk	Illinois State Police	2	berkrob@isp.state.il.us
14	Emily	Weber	Hamilton Co. Coroners Lab	3	emily.weber@hamilton-co.org
15	John	Drugan	Massachusetts State Police Forensic	4	john.drugan@massmail.state.ma.us
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17	Jason	Schroeder	Harris Co. ME	4	Jason.Schroeder@ifs.hctx.net



Task Group Chairs



Task Group	Name
Proficiency, Competency and Training	Thomas White
Reporting, Qualifiers, Disclaimers and Interpretation	Debra Gibson
Validation and Instrument Requirements	Nicholas Richie
Methodology, Research and Literature	Suzanne Bell
Testimony and Ethics	Michael Trimpe



Subcommittee Liaisons



Position	Name
QIC Liaison	James Garcia
HFC Liaison	Mike Trimpe
LRC Liaison	Emily Weber
KAVI Liaison	Matney Wyatt



Summary of Standards/Guidelines Priority Actions



Priority	Working Title of Document
HIGH	(RA-1) ASTM E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry
HIGH	(SDO-2) GSR Training Guide (New Document)
HIGH	(SDO-3) GSR Testimony (New Document)
HIGH	(SDO-4) Report writing, Qualifying Statements and Interpretation (New Document)
MEDIUM	(SDO-5) Methodology, Research, and Literature Review (New Document)
MEDIUM	(SDO-6) Validation and Instrument requirements (New Document)
MEDIUM	(RA-7) ASTM E620-11 Standard Practice for Reporting Opinions of Scientific or Technical Experts
MEDIUM	(SDO-8) Task irrelevant information when considering cognitive and contextual bias in GSR analysis (New Document)



Standards/Guidelines Development Priority 1 Document



Document Title:

(RA-1) ASTM E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry

Scope:

This guide covers the analysis of gunshot residue (GSR) by scanning electron microscopy/energy-dispersive X-ray spectrometry (SEM/EDS) using manual and automated methods.

Objective/rationale:

The objective is to provide a standard method for the analysis and classification of primer gunshot residues by SEM/EDS.

Task Group Name: E1588 Task Group

Task Group Chair Name: James Garcia & Mike Martinez

Date of Last Task Group Meeting: January 27-29, 2016



Standards/Guidelines Development Priority 1 Document

Key Components of Standard:

(RA-1) ASTM E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry

- A best practice guide when conducting the analysis and interpretation of primer gunshot residues.

Priority 1: (RA-1)E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry



Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Working with ASTM e30.01 pending final release	RA-100	J. Garcia	April 2016
Submit SDO Packet for SAC Approval	RA-200	M. Martinez	May 2016
SAC Voting results	RA-300	M. Martinez	August 2016



Standards/Guidelines Development Priority 2 Documents



Document Title:

(SDO-2) GSR Training Guide (New Document)

Scope:

This standard provides a summary of the knowledge and skills that should be demonstrated in order to establish competency as an independent GSR analyst. These recommendations shall be used in conjunction with the laboratory's existing training protocols and standard operating procedures.

Objective/rationale:

The training guide outlines and describes the goals for a comprehensive training program in gunshot primer residue (GSR) analysis by scanning electron microscopy/energy dispersive x-ray spectrometry (SEM/EDS).

Task Group Name: Proficiency, Competency and Training

Task Group Chair Name: Thomas White

Date of Last Task Group Meeting: January 27-29, 2016



Standards/Guidelines Development Priority 2 Documents

Key Components of Standards:

(SDO-2) GSR Training Guide (New Document)

- Outlines and describes key areas to be mastered by a trainee performing GSR examination by SEM/EDS.
- Compilation of suggested readings to supplement the training guide.



Priority 2:
(SDO-2) GSR Training Guide (New Document)

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Additions and edits to document. Subcommittee vote to push forward.	SDO-100; 200	T. White	March 2016
Send document to resource committees for comment.	---	T. White & Liaisons	April 2016
Complete the SDO Process Request form and submit documents to the SAC.	SDO-300	T. White	July 2016



Standards/Guidelines Development Priority 3 Documents



Document Title:

(SDO-3) GSR Testimony (New Document)

Scope:

GSR Testimony is challenging because the interpretation of results requires consideration of various issues from particle formation through collection and analysis that may be raised. This document will attempt to address commonly encountered questions presented in testimony, appropriate answers, and examples of testimony limitations pertaining to GSR. The document will also provide guidance to a witness in preparing for admissibility of GSR evidence.

Objective/rationale:

This standard/guide will attempt to provide assistance in preparation for GSR specific testimony including admissibility issues, limitations, and answers to commonly asked questions when giving testimony in a criminal court of law.

Task Group Name: Testimony and Ethics

Task Group Chair Name: Michael Trimpe

Date of Last Task Group Meeting: January 27-29, 2016



Standards/Guidelines Development Priority 3 Documents

Key Components of Standards:

(SDO-3) GSR Testimony (New Document)

- Examples of questions and answers a GSR expert may encounter while giving testimony.
- A list of limitations in interpretation of GSR results when testifying
- Assistance in preparation for an admissibility hearing in GSR
- This document will be used to supplement existing legal literature used to describe the roles and responsibilities of Expert Witness Testimony in the U.S. Criminal Court system.



Priority 3:
(SDO-3) GSR Testimony (New Document)

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Additions and edits to document. Subcommittee vote to push forward.	SDO-100; 200	M. Trimpe	April 2016
Send document to resource committees for comment.	---	M. Trimpe & Liaisons	May 2016
Complete the SDO Process Request form and submit documents to the SAC.	SDO-300	M. Trimpe & M. Martinez	July 2016



Standards/Guidelines Development Priority 4 Documents



Document Title:

(SDO-4) Report writing, Qualifying Statements and Interpretation (New Document)

Scope:

The goal of this standard/guide will be to compile, evaluate and suggest a unified reporting method when issuing GSR reports to our customers. The focus will be on identifying common language used while attempting to strengthen report conclusions with clear and concise verbiage.

Objective/rationale:

To determine the clearest and most unambiguous language to use when creating a GSR report.



Standards/Guidelines Development Priority 4 Documents

Key Components of Standards:

(SDO-4) Report writing, Qualifying Statements and Interpretation (New Document)

- Submit and evaluate questionnaires given to laboratories performing GSR analysis.
- Collect examples of reports or the language used when reporting the conclusion of results.
- Define common GSR specific terms.





Priority 4:

**(SDO-4) Report writing, Qualifying Statements and Interpretation
(New Document)**

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Additions and edits to document. Subcommittee vote to push forward.	SDO-100	D. Gibson	2017
Send document to resource committees for comment.	---	D. Gibson & Liaisons	



Standards/Guidelines Development Priority 5 Documents



Document Title:

(SDO-5) Methodology, Research, and Literature Review (New Document)

Scope:

To discuss and collate a list of GSR research projects, database bibliographic reference material and draft ideas for additional methodology. Standards will be developed for new methodologies.

Objective/rationale:

The objective is to develop standards for new methodologies in the field of GSR analysis.

Task Group Name: Methodology, Research and Literature

Task Group Chair Name: Suzanne Bell

Date of Last Task Group Meeting: January 27-29, 2016





Standards/Guidelines Development Priority 5 Documents

Key Components of Standards:

(SDO-5) Methodology, Research, and Literature Review (New Document)

- Evaluate new and alternative methods for the detection of GSR and develop standards.





Priority 5:

(SDO-5) Methodology, Research, and Literature Review (New Document)

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Recommend standard/guideline.	SDO-100	S. Bell	



Standards/Guidelines Development Priority 6 Documents



Document Title:

(SDO-6) Validation and Instrument requirements (New Document)

Scope:

There is a need in the GSR community for guidance to create standards dealing with specific criteria for instruments used for the detection of GSR by SEM/EDS.

Objective/rationale:

To develop standards required for SEM/EDS and validation/calibration requirements for the detection of GSR by SEM/EDS



Standards/Guidelines Development Priority 6 Documents

Key Components of Standards:

(SDO-6) Validation and Instrument requirements (New Document)

- To develop standards required for SEM/EDS and validation/calibration requirements for the detection of GSR by SEM/EDS.





Priority 6:

(SDO-6) Validation and Instrument requirements (New Document)

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Recommend standard/guideline.	SDO-100	N. Ritchie	



Standards/Guidelines Development Priority 7 Documents



Document Title:

(RA-7) ASTM E620-11 Standard Practice for Reporting Opinions of Scientific or Technical Experts

Scope:

This practice covers the scope of information to be contained in formal written technical reports which express the opinions of the scientific or technical expert with respect to the study of items that are or may reasonably be expected to be the subject of criminal or civil litigation.

Objective/rationale:

This practice establishes those elements of the expert's opinion report which will make the report understandable to the intended recipient and focus on the technical aspects germane to the purpose for which the opinion is rendered.

Task Group Name: ASTM E620 Liaison

Task Group Chair Name: M. Martinez

Date of Last Task Group Meeting: January 27-29, 2016





Standards/Guidelines Development Priority 7 Documents

Key Components of Standards:

(RA-7) ASTM E620-11 Standard Practice for Reporting Opinions of Scientific or Technical Experts

- A best practice guide to develop a unified method for reporting conclusions of forensic results.





Priority 7:

(RA-7) ASTM E620-11 Standard Practice for Reporting Opinions of Scientific or Technical Experts

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Recommend standard/guideline.	SDO-100	M. Martinez	



Standards/Guidelines Development Priority 8 Documents



Document Title:

(SDO-8) Task irrelevant information when considering cognitive and contextual bias in GSR analysis (New Document)

Scope:

The OSAC Human Factors Resource Committee (HFC) has brought forth concerns about cognitive and contextual bias in forensic science analysis. What information is necessary for the analyst in each sub discipline?

Objective/rationale:

This document will attempt to describe a method for analyzing GSR samples without bias including a list of task relevant and task irrelevant information the analyst needs for proper analysis and when certain information can be known in an attempt to eliminate bias.

Task Group Name: Testimony and Ethics

Task Group Chair Name: Michael Trimpe

Date of Last Task Group Meeting: January 27-29, 2016



Standards/Guidelines Development Priority 8 Documents

Key Components of Standards:

(SDO-8) Task irrelevant information when considering cognitive and contextual bias in GSR analysis (New Document)

- Identify task relevant and task irrelevant information necessary to analyze GSR samples.
- Describe a method to ensure bias free analysis of GSR.
- Describe a sequence of revealing information to ensure proper analysis of GSR evidence.



Priority 8:

(SDO-8) Task irrelevant information when considering cognitive and contextual bias in GSR analysis (New Document)

Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Additions and edits to document. Subcommittee vote to push forward.	SDO-100; 200	M. Trimpe	August 2016
Send document to resource committees for comment	---	M. Trimpe & Liaisons	September 2016
Complete the SDO Process Request form and submit documents to the SAC.	SDO-300	M. Trimpe & M. Martinez	October 2016



Summary of Standards/Guidelines Priority Actions



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HIGH	(RA-1) ASTM E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry
HIGH	(SDO-2) GSR Training Guide (New Document)
HIGH	(SDO-3) GSR Testimony (New Document)
HIGH	(SDO-4) Report writing, Qualifying Statements and Interpretation (New Document)
MEDIUM	(SDO-5) Methodology, Research, and Literature Review (New Document)
MEDIUM	(SDO-6) Validation and Instrument requirements (New Document)
MEDIUM	(RA-7) ASTM E620-11 Standard Practice for Reporting Opinions of Scientific or Technical Experts
MEDIUM	(SDO-8) Task irrelevant information when considering cognitive and contextual bias in GSR analysis (New Document)



Standards/Guidelines Reviewed For Technical Merit



Title	Developing Organization	Status*	OSAC Process Stage (e.g., RA 100)
(RA-1) ASTM E1588-10: Standard Guide for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry	ASTM International	In SDO Revision	SDO-300



Research Gaps Identified

- Specific identification of shooters
- Comprehensive GSR persistence study
- Development of Characterized Reference Stubs
- Fundamental research into mechanism of particle formation

Note- Numerous additional needs have been discussed and will be released over time as the concepts are further developed.





Additional Items

- SAC Task Group Liaisons:
 - Proficiency
 - Liaison: Thomas White
 - Terminology
 - Liaison: Doug Degaetano
 - Training
 - Liaison: Rodney Simmons
 - QA
 - Liaison: Koren Powers





Additional Items

- Other Task Groups Formed:
 - Relevance/Importance to Customer
 - Chair: James Garcia
 - Contact: james.d.garcia1.civ@mail.mil
 - Contamination
 - Chair: Jason Schroeder
 - Contact: Jason.Schroeder@ifs.hctx.net





Additional Items of Interest

- Established a joint corporation with the European Network of Forensic Science Institutes (ENFSI) and appoint a liaison.
 - OSAC GSR members who are now ENFSI Firearms & GSR committee associate members:
 - Michael Trimpe
 - Michael Martinez



Additional Items of Interest

- GSR Subcommittee Affiliate Members:

Lawrence	Gunaratnam	National Bureau of Investigation Finland
Ludwig	Niewoehner	Bundeskriminalamt (BKA)
Michael	McVicar	Centre of Forensic Sciences
Nadav	Levin	Forensic Scientist, Isreal
Peter	Ross	Victoria Police Forensic Services Dept.
Karl	Lueftl	Bavarian State Criminal Police Office
JJ	Cavaleri	Los Angeles Co. Sheriffs Office Lab





Priority Action Report

Gunshot Residue (GSR) Subcommittee

Chemistry/Instrumental Analysis SAC
Michael V. Martinez Subcommittee Chair
February 23, 2016

