



## **OSAC Overview and CSI Subcommittee Update**

CBDIAI Conference

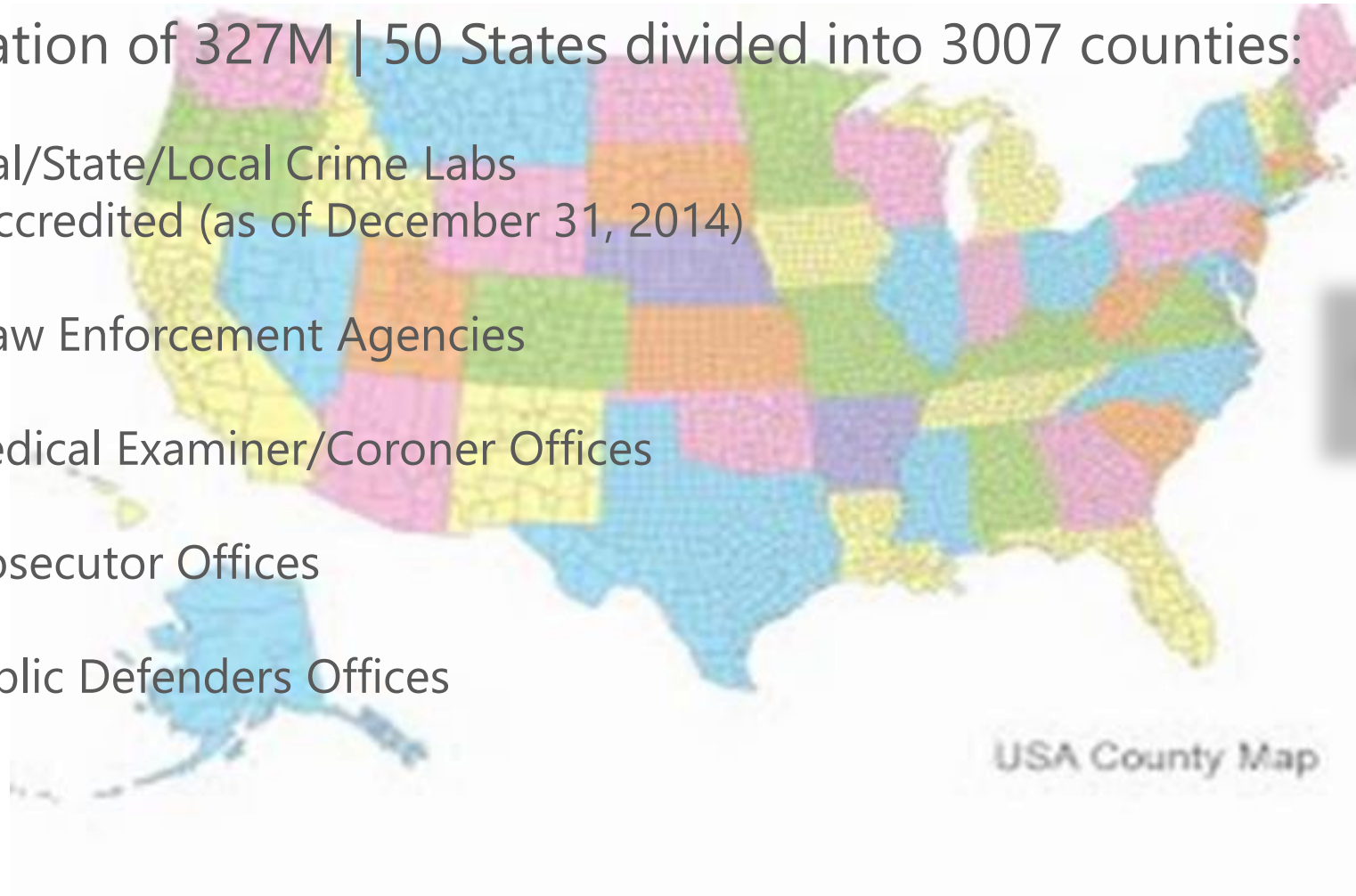
Michael P. Kessler

September 24, 2020

# Forensic Science Landscape in U.S.

U.S. population of 327M | 50 States divided into 3007 counties:

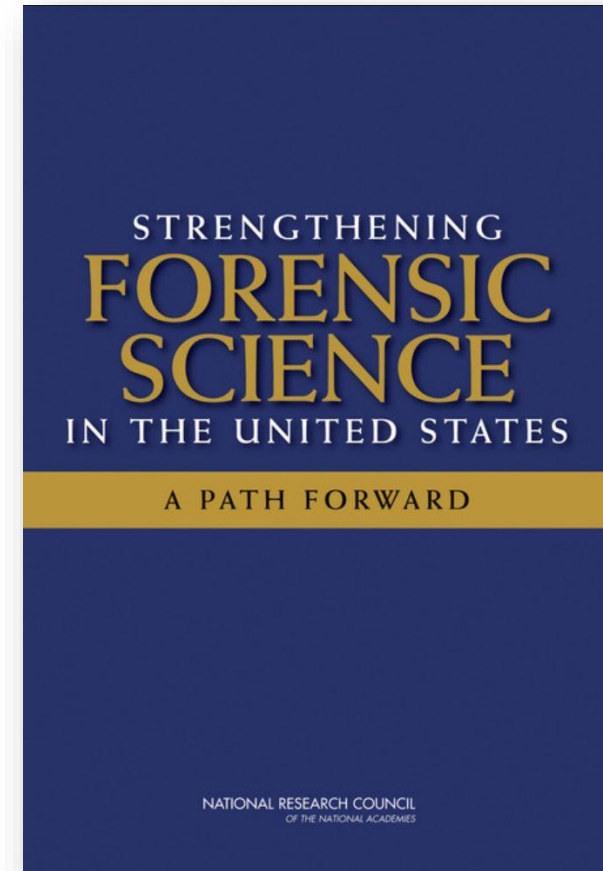
- 409 Federal/State/Local Crime Labs
  - 88% accredited (as of December 31, 2014)
- 18,000+ Law Enforcement Agencies
- 2,400+ Medical Examiner/Coroner Offices
- 2,300+ Prosecutor Offices
- 3,000+ Public Defenders Offices



U.S. has NO forensic science owner!

# Issues in Forensic Science

- Fragmented and inconsistent operations within and between jurisdictions
- Under resourced and understaffed labs
- Different types of practitioners with different levels of training and performance standards
- Lack of mandatory training, continuing education, certification, and accreditation programs
- Limited opportunities for research funding
- Lack of standards within and between disciplines



# OSAC's Origin

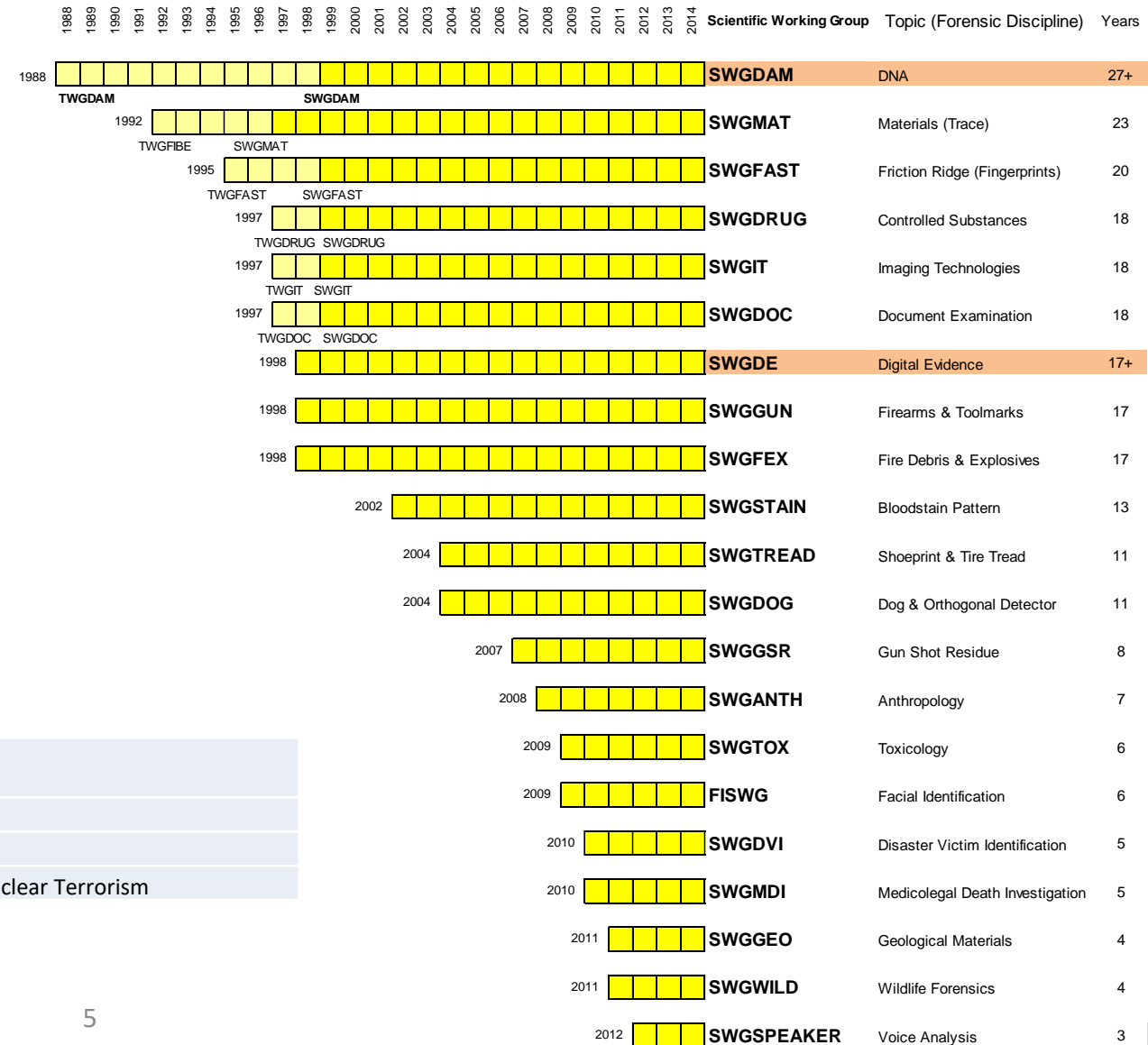
National Academy of Sciences (NAS)  
Report published:  
February 18, 2009

NIST announces  
creation of OSAC at  
NCFS: February 4, 2014



# Scientific Working Groups (SWGs)

- Collectively, these 21 SWGs have had over 750 participants and produced over 250 documents
- Most SWGs have ceased operations
- SWGDAM, SWGDE, SWGDRUG, & FISWG continue to operate



At least three other SWGs existed previously:

<b>SWGIBRA</b>	Illicit Business Records
<b>SWGMGF</b>	Microbial Genetics and Forensics
<b>SWGCBRN</b>	Chemical, Biological, Radiological and Nuclear Terrorism

# OSAC's Objective & Core Principles

## HARMONIZATION

To create a sustainable organizational infrastructure dedicated to identifying and fostering the development of technically sound, consensus-based documentary standards and guidelines for widespread implementation throughout the forensic science community

## BALANCE

## OPENNESS

## CONSENSUS

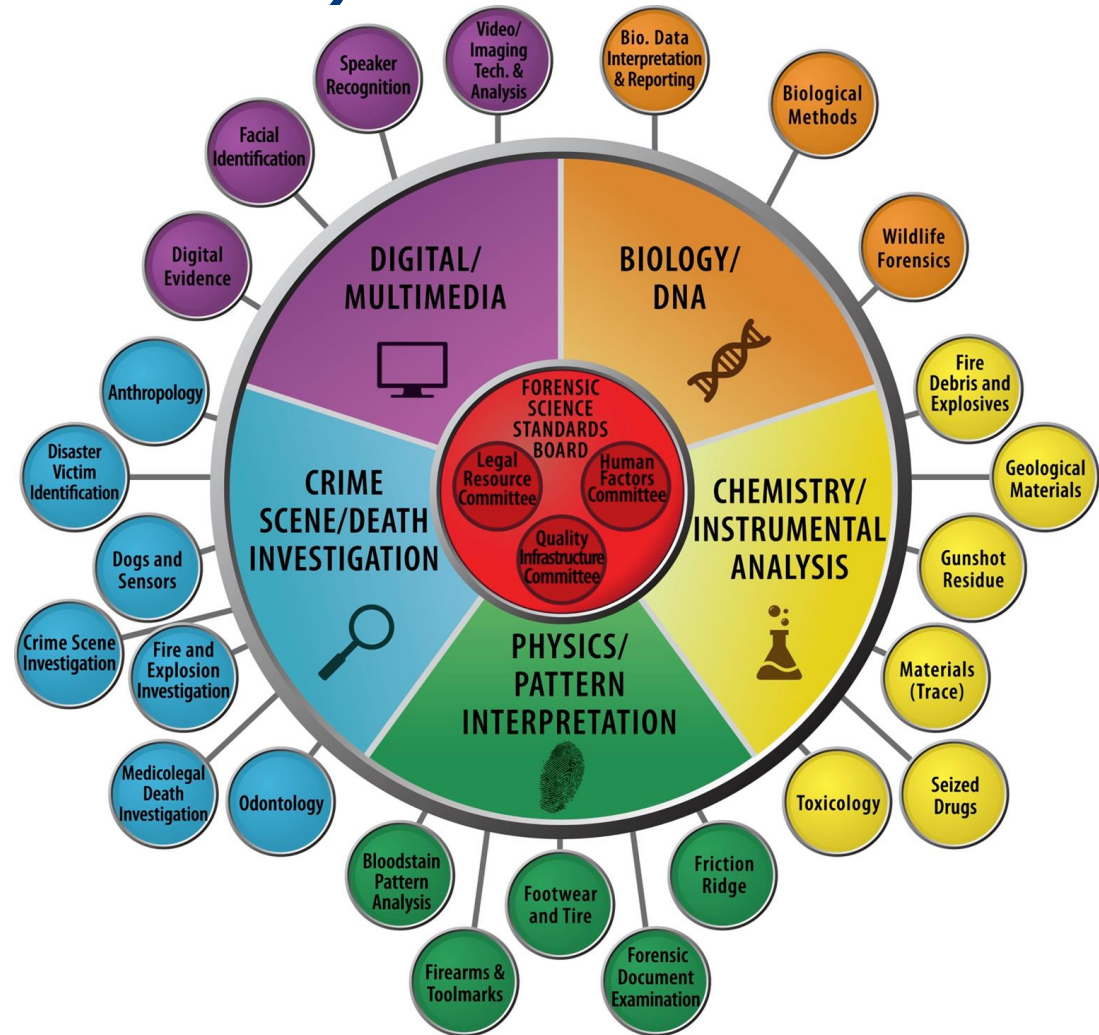
# OSAC Stakeholders

**To support its mission, OSAC collaborates with and supports a wide-range of stakeholders with varied interests:**

- NIST
- The U.S. Department of Justice (DOJ)
- OSAC members (present and future)
- Forensic science service providers
- Academic institutions
- Representatives of the criminal justice system
- International and national standards development organizations (SDOs)
- Professional organizations (forensic science & others)
- Federal, state & local government agencies
- Non-government organizations (NGOs)
- Private sector manufacturers & service vendors supplying forensic service providers
- Quality system providers (accrediting & certifying bodies)
- The public

# OSAC's Structure (OSAC 1.0)

- 546 members
- 268 affiliates
- 2578 applications
- 48 states represented  
(as of June 1, 2020)





# Organization of Scientific Area Committees (OSAC) for Forensic Science

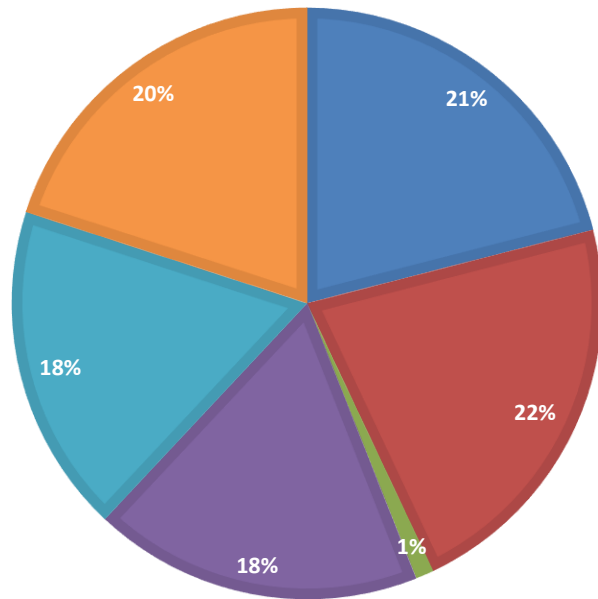
## OSAC 2.0 Scientific Area Committee and Subcommittee Structure

- **Biology SAC**
  - Human Forensic Biology
  - Wildlife Forensic Biology
- **Chemistry: Seized Drugs & Toxicology SAC**
  - Seized Drugs
  - Forensic Toxicology
- **Chemistry: Trace Evidence SAC**
  - Trace Materials
  - Ignitable Liquids, Explosives, & Gunshot Residue
- **Scene Examination SAC**
  - Crime Scene Investigation & Reconstruction
  - Fire & Explosion Investigation
  - Dogs & Sensors
- **Medicine SAC**
  - Forensic Anthropology
  - Disaster Victim Identification & Medicolegal Death Investigation
  - Forensic Nursing
  - Forensic Odontology
- **Digital/Multimedia SAC**
  - Digital Evidence
  - Facial Identification
  - Speaker Recognition
  - Video Imaging/Technology & Analysis
- **Physics/Pattern Interpretation SAC**
  - Bloodstain Pattern Analysis
  - Firearms & Toolmarks
  - Footwear & Tire
  - Forensic Document Examination
  - Friction Ridge

# OSAC Employer & Job Classifications

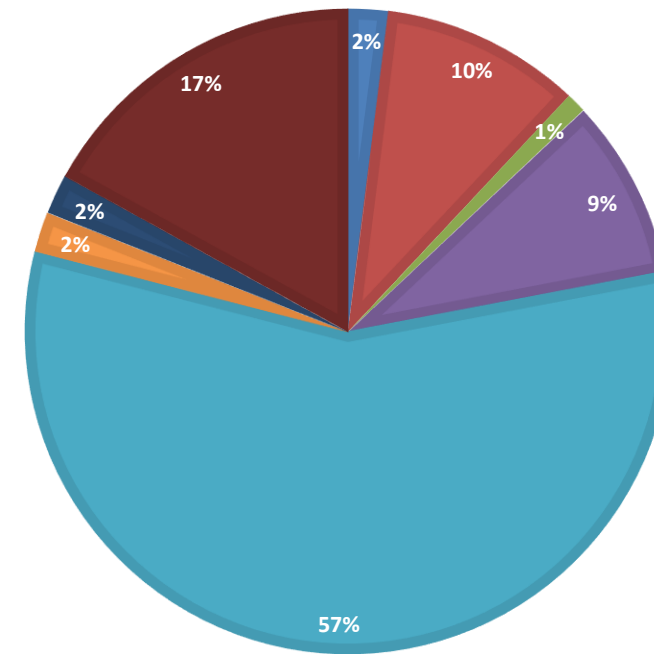
## EMPLOYER

■ Academic ■ Federal ■ FFRDC ■ Local ■ Private ■ State



## JOB

■ Attorney ■ Educator ■ Judge ■ Other ■ Practitioner ■ QA Manager ■ R&D ■ Researcher



# What OSAC...

## DOES

**Facilitates development**  
of science-based  
standards through the  
formal SDO processes



**Evaluates existing  
standards** published by  
SDOs for placement on the  
OSAC Registry



**Endorses standards**  
on the Registry &  
**promotes** their  
implementation



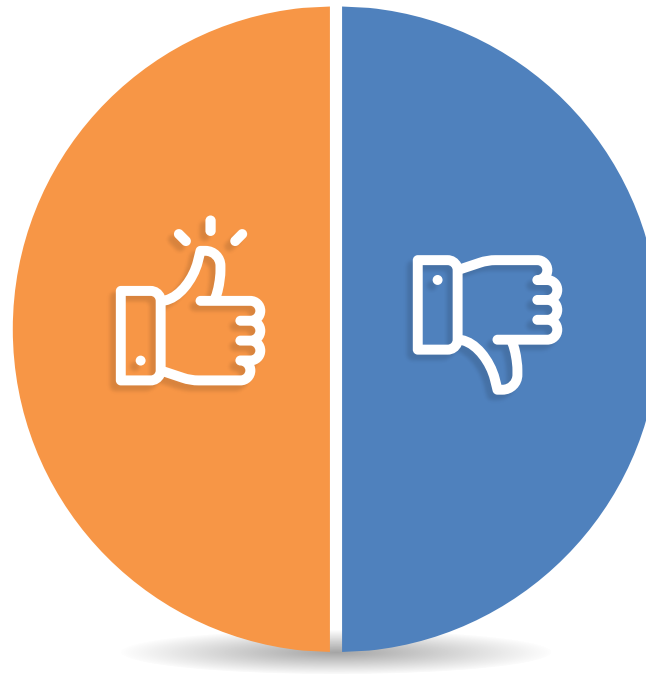
## DOESN'T



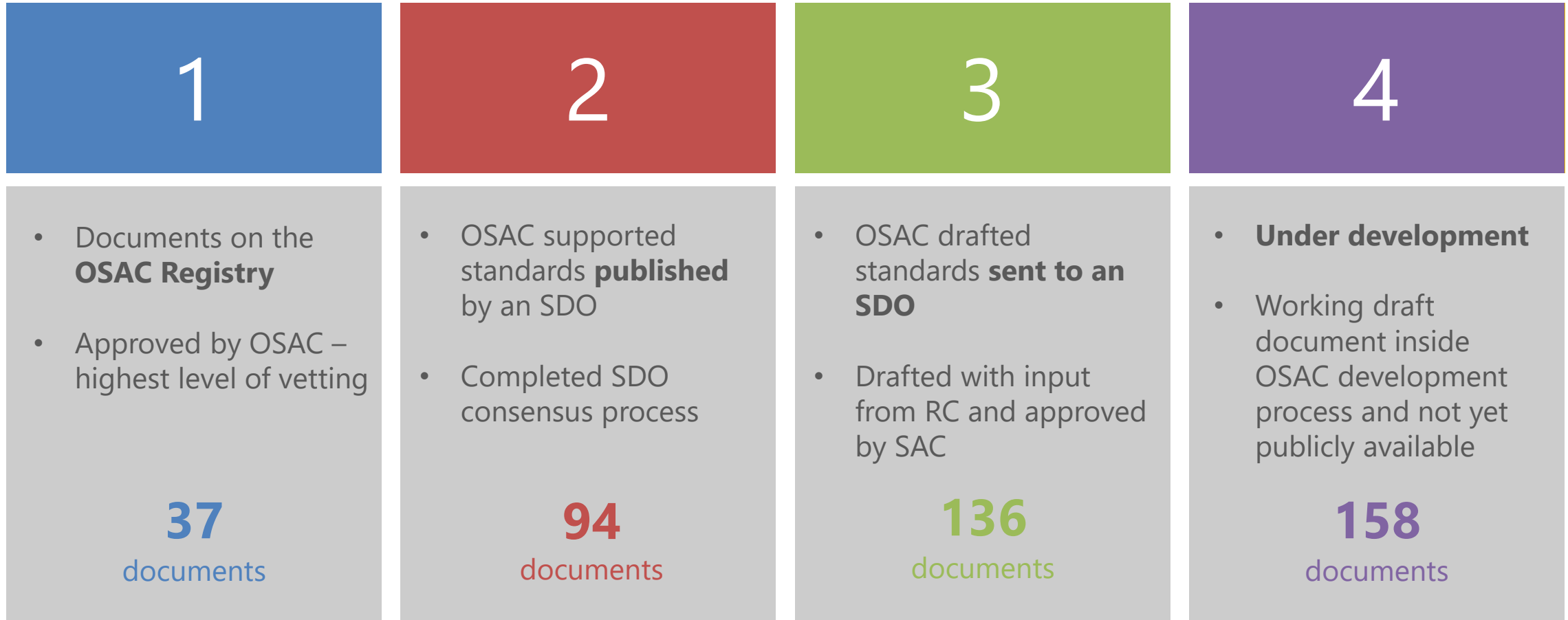
Publish standards



Have the authority to  
enforce standards



# OSAC Document Tiers



# OSAC Registry



- Trusted repository of high-quality, science-based standards and guidelines for the practice of forensic science
- Documents developed using a consensus-based process and pass a technical merit review by forensic science practitioners, academic researchers, statisticians and measurement scientists
- Adoption by relevant agencies and practitioners encouraged

<https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/osac-registry>

# OSAC Registry Standards

**37**  
standards

- 3 Biology/DNA
- 1 Bloodstain Pattern Analysis
- 3 Digital Evidence
- 2 Disaster Victim Identification
- 1 Dogs & Sensors
- 3 Facial Identification
- 2 Fire & Explosion Investigation
- 7 Materials (Trace)
- 2 Odontology
- 2 Seized Drugs
- 3 Toxicology
- 2 Wildlife Forensics
- 6 Interdisciplinary

<https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/osac-registry-approved-standards>

# OSAC Registry Implementation Pathways

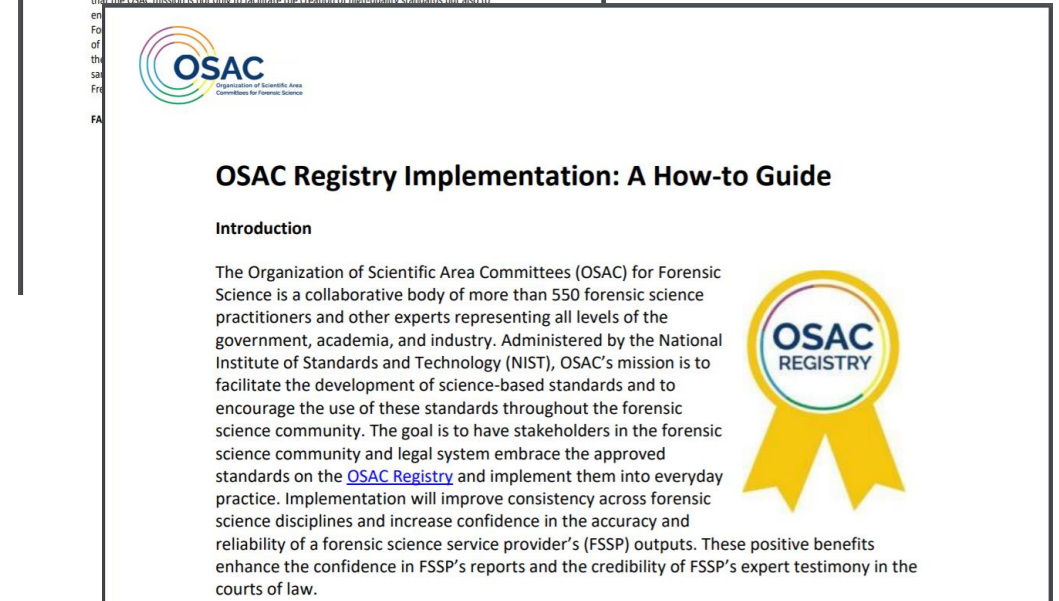
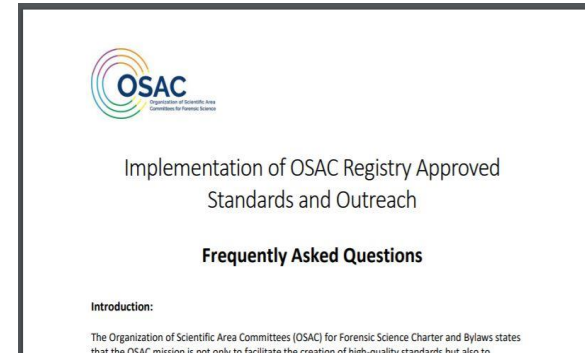
- Self Implementation
- Professional Associations
- Legal Community
- Certification & Accreditation Bodies
- Funding Bodies
- State Forensic Science Commissions/  
Regulatory Authorities



<https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/implementation-plan>

# Implementation Resources

- Implementation Strategy Sessions Recap Report
- Frequently Asked Questions (FAQs)
- Lab Declaration Form
- Standards Implementation Tracker that lists all standards by discipline and categorizes them into various development stages (Tier 1-4)
- Detailed “How To” Guidelines with step-by-step instructions for labs



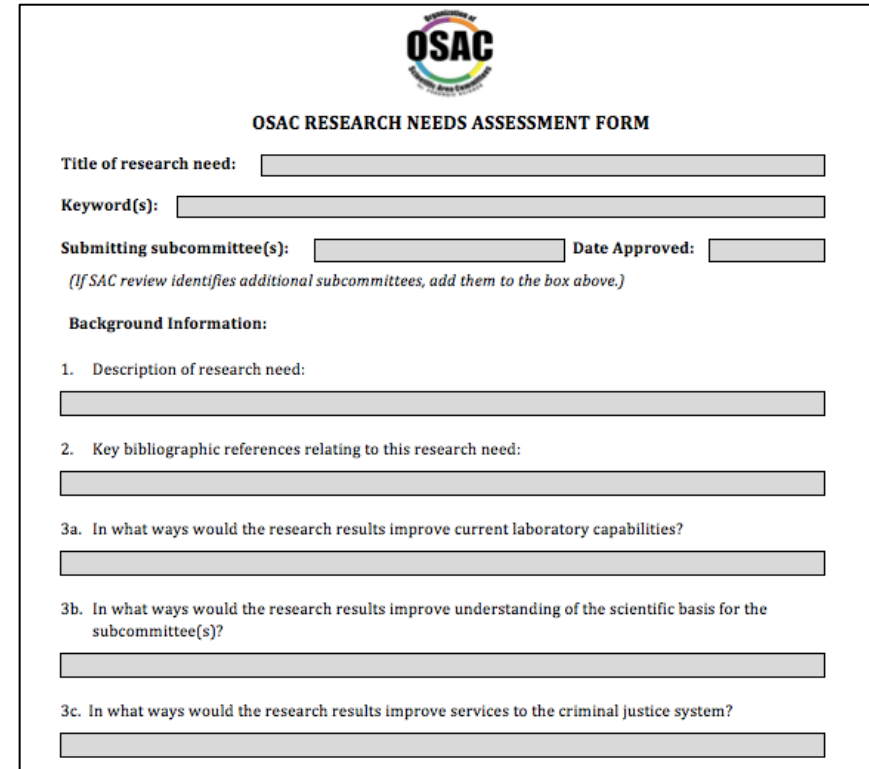
[nist.gov/topics/organization-scientific-area-committees-forensic-science/implementation-plan](https://nist.gov/topics/organization-scientific-area-committees-forensic-science/implementation-plan)



# Other OSAC Initiatives



<http://lexicon.forensicosac.org/Term/Home/Index>

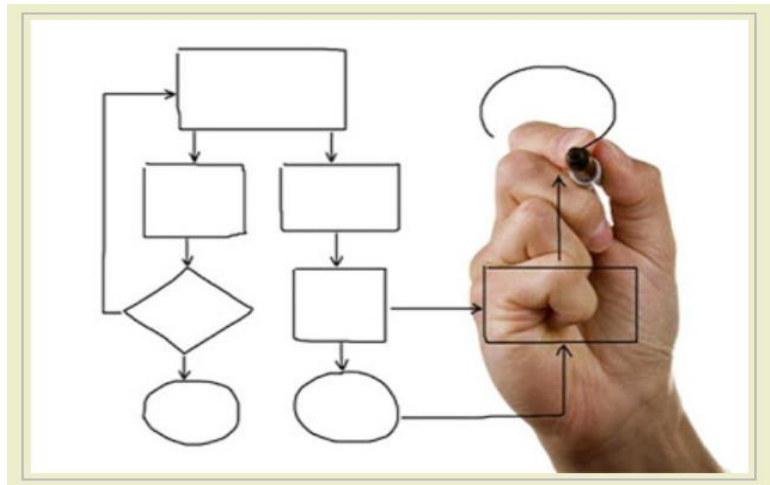


The form is titled "OSAC RESEARCH NEEDS ASSESSMENT FORM" and includes the following sections:


- Title of research need:** [Text input field]
- Keyword(s):** [Text input field]
- Submitting subcommittee(s):** [Text input field] **Date Approved:** [Text input field]
- (If SAC review identifies additional subcommittees, add them to the box above.)*
- Background Information:**
  - 1. Description of research need: [Text input field]
  - 2. Key bibliographic references relating to this research need: [Text input field]
  - 3a. In what ways would the research results improve current laboratory capabilities? [Text input field]
  - 3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)? [Text input field]
  - 3c. In what ways would the research results improve services to the criminal justice system? [Text input field]

<http://www.nist.gov/forensics/osac/osac-research-needs-assessments.cfm>

# Other OSAC Initiatives (continued)

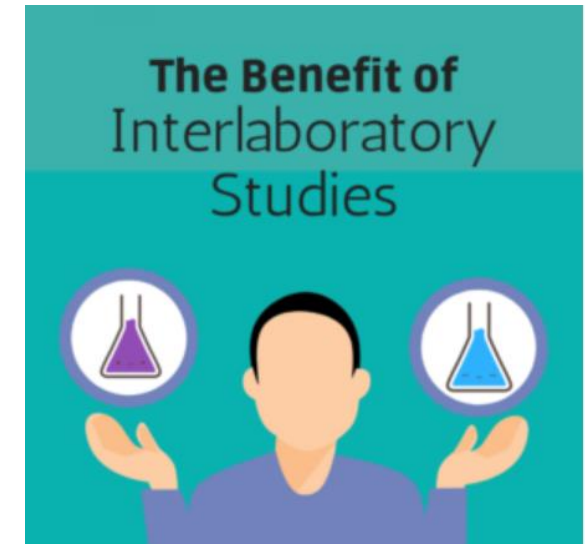



OSAC Technical Series 0002



**A Framework for Harmonizing  
Forensic Science Practices and  
Digital/Multimedia Evidence**

*OSAC Task Group on Digital/Multimedia Science*  
<http://dx.doi.org/10.29325/OSAC.TS.0002>



# OSAC Website

www.nist.gov/osac

The screenshot shows the top navigation bar of the OSAC website. On the left is the NIST logo. On the right is a search bar labeled "Search NIST" with a magnifying glass icon and a blue "Menu" button with a hamburger icon. Below the navigation bar is a large green banner. On the left side of the banner, the text "THE ORGANIZATION OF SCIENTIFIC AREA COMMITTEES FOR FORENSIC SCIENCE" is written in white, bold, uppercase letters. To the right of this text, enclosed in large white square brackets, is the mission statement: "Strengthening the nation's use of forensic science by facilitating the development of technically sound standards and guidelines and encouraging their use throughout the forensic science community."

**Organizational Structure**

**News & Communications**

**Registry**

**Standards Approval Process**

**Charter, Bylaws and Terms of Reference**

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OSAC Standards Bulletin - July 2020



OSAC Newsletter - Spring Edition, April 2020



Get Involved with OSAC



# OSAC Communications



- Provides monthly updates on forensic science standards moving through development process at SDOs and those moving through OSAC Registry process
- Available on OSAC's website: <https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/osac-standards-bulletin>



- Quarterly communication that provides updates on OSAC's program status, activities, accomplishments, and opportunities for public input with internal and external audiences.
- Available on OSAC's website: <https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/osac-newsletter>



- Follow us! <https://www.linkedin.com/showcase/organization-of-scientific-area-committees-osac-for-forensic-science/>

# Crime Scene Investigation Subcommittee

## Task Group Organization



\*Forensic Nursing Task Group becomes Forensic Nursing Subcommittee October 1, 2020

# Research & Development Needs

- Assessing the Culture of Contextual Bias in Forensic Scene Evidence Collection, Handling, and Processing
- Assessment of Level of Personal Protective Equipment (PPE) Required at Crime Scenes
- Decontamination of Crime Scene Equipment
- Laboratory Techniques and Technologies at the Crime Scene
- Use of Technology for Crime Scene Documentation

<https://www.nist.gov/topics/forensic-science/osac-research-development-needs>

# FY2021 Priorities

- 1. Focus on completion of standards that relate to the base of practice including education/training/professional development for specialties (i.e. CSR, CR, ACI, VFS, FE) crime scene investigation and reconstruction fundamental principles (e.g., initial response and identification, collection and preservation, documentation and reporting, specialized scene fundamentals, and QMS/QA-QC).
- 2. Following base of practice standards development, move into specific methods.
- 3. Continued collaboration with overlapping SCs or SCs with shared interest in standards under development as well as support to SDOs (ASTM & ASB).

# Draft Standards in Development (Tier 4)

- Standard Guide for Crime Scene Reconstruction
- Crime Scene Reconstructionist Training, Continuing Education, and Professional Development
- Standard for Initial Response at Scenes by Crime Scene Investigators
- Standards for the Clinical Veterinary Forensic Examination of the Suspected Abused Animal
- Standard Practice for the Documentation and Processing of Animal Abuse Scenes
- Standard Practice for Crime Scene Metrology
- Standard Guide for Quality Management in Crime Scene Investigation and Reconstruction
- Standard Practice for the Collection and Preservation of Biological Materials
- Standard Method for the Chemical Testing of Suspected Projectile Impacts
- Standard Method for Measuring Trajectory Angles
- Standard for the Collection and Preservation of Arthropod Samples from Humans

or Other Animals



# New Standards Sent to SDO (Tier 3)

- ASTM International Committee E30 on Forensic Sciences
  - Standard Practice for Crime Scene Investigator Training, Continuing Education, Professional Development, Certification, and Accreditation
  - Standard Guide for Sexual Violence Investigation, Examination, and Evidence
  - Standard Practice for Transmittal of Evidence in Sexual Violence Investigation
  - Standard Practice for Specification for Equipment and Supplies in Sexual Assault Investigations
- AAFS Academy Standards Board (ASB) Crime Scene Investigation Consensus Body
  - Guiding Principles for Crime Scene Investigation and Reconstruction
  - Standard for Initial Response at Scenes by Law Enforcement
  - Standard for On-Scene Collection and Preservation of Physical Evidence
  - Standard Practice for the Documentation and Processing of Shooting Scenes

# Highlights from OSAC Proposed Standard Guiding Principles for Crime Scene Investigation and Reconstruction

- Provides guiding principles and recommendations for practicing crime scene investigators and reconstructionists.
- Each crime scene is unique and requires crime scene investigators and reconstructionists to continuously evaluate how to proceed with processing in a manner that is safe and best preserves the evidence and its context. All decisions made by a crime scene investigator or reconstructionist before, during, and after a crime scene is processed should consider the following:
  1. Legal Considerations
  2. Personnel Safety
  3. Scientific Reliability
  4. Preserving Context
  5. Maintaining Evidence Integrity
  6. Transparency and Ethics
  7. Managing Bias

# Highlights from OSAC Proposed Standard Standard for Initial Response at Scenes by Law Enforcement

- Applies to the first law enforcement personnel who respond to a scene and whose initial or primary responsibility does not involve crime scene investigation.
- Addresses:
  - Arrival Procedure
  - Safety Considerations
  - Medical Intervention
  - Assessing the Scene
  - Scene Containment and Control
  - Evidence Preservation
  - Turing Scene Over to Investigators
  - Document Actions and Observations

# Standards Published by SDO (Tier 2)

- ASTM International Committee E30 on Forensic Sciences
  - ASTM E620-11(18) Standard Practice for Reporting Opinions of Scientific or Technical Experts
  - ASTM E860-07(13)e3 Standard Practice for Examining and Preparing Items that may Become Involved in Criminal or Civil Litigation
  - ASTM E1020-13e1 Standard Practice for Reporting Incidents that may Involve Criminal or Civil Litigation
  - ASTM E1188-11(17) Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator
  - ASTM E1459-13(18) Standard Guide for Physical Evidence Labeling and Related Documentation

# Standards on the OSAC Registry (Tier 1)

- ISO 21043-2 Forensic Sciences - Part 2: Recognition, recording, collecting transport and storage of items (effective December 3, 2019).
- ASTM E2917-19a Standard Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs (effective November 5, 2019).

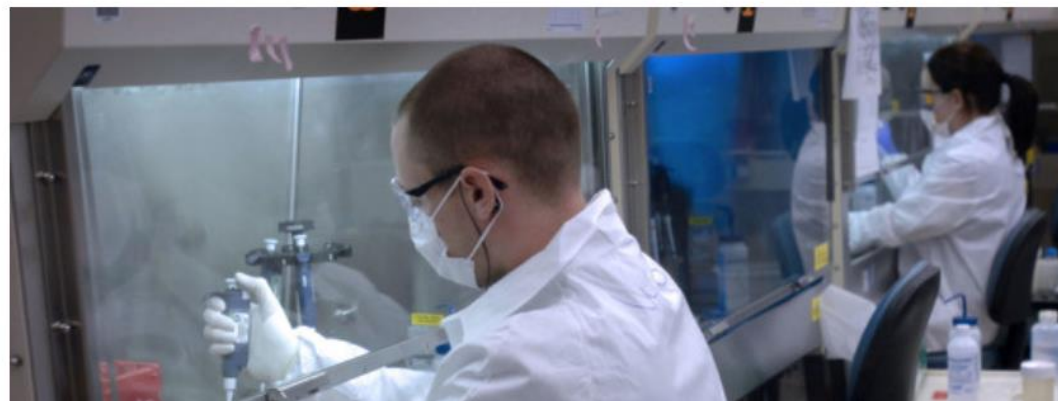
## Interdisciplinary Training Standard Added to the OSAC Registry

National Institute of Standards and Technology (NIST) sent this bulletin at 12/02/2019 10:00 AM EST

**NIST**

[View as a Web Page](#)

## Interdisciplinary Training Standard Added to the OSAC Registry



# ASTM E2917- 19a

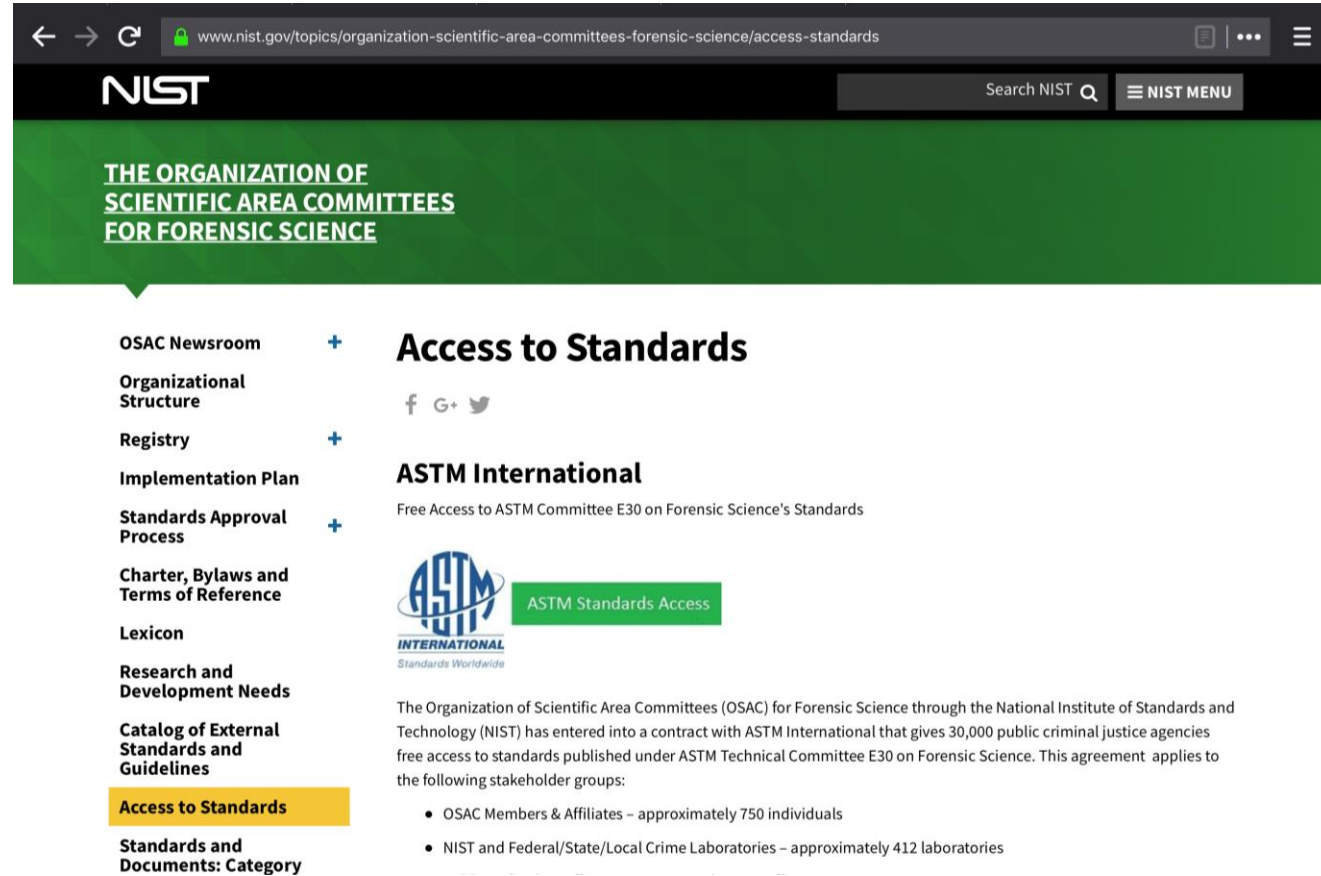
# Registry Approved (December 3, 2019)

## **ISO 21043-2 Forensic Sciences - Part 2: Recognition, recording, collecting transport and storage of items**

- *SCOPE*- This document specifies requirements for the forensic process focusing on recognition, recording, collection, transport and storage of items of potential forensic value. It includes requirements for the assessment and examination of scenes but is also applicable to activities that occur within the facility. This document also includes quality requirements.

# Accessing Published Standards

ASB – public access (currently)  
ASTM – free access via OSAC  
License (currently through OCT  
2021)



The screenshot shows a web browser window with the URL [www.nist.gov/topics/organization-scientific-area-committees-forensic-science/access-standards](http://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/access-standards). The page features the NIST logo and a search bar. The main heading is "THE ORGANIZATION OF SCIENTIFIC AREA COMMITTEES FOR FORENSIC SCIENCE". A left-hand navigation menu includes items like "OSAC Newsroom", "Organizational Structure", "Registry", "Implementation Plan", "Standards Approval Process", "Charter, Bylaws and Terms of Reference", "Lexicon", "Research and Development Needs", "Catalog of External Standards and Guidelines", and "Access to Standards" (highlighted in yellow). The main content area is titled "Access to Standards" and includes social media icons, the "ASTM International" logo, and a green button labeled "ASTM Standards Access". Below this, a paragraph explains the contract with ASTM International, and a bulleted list identifies stakeholder groups: OSAC Members & Affiliates (approx. 750) and NIST and Federal/State/Local Crime Laboratories (approx. 412).



# How Can You Get Involved?

Sign up for OSAC communications



<https://service.govdelivery.com/accounts/USNIST/subscriber/new>



Become an OSAC member

<https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/apply-join-osac>

Review and comment on documents



Stay informed

<https://www.nist.gov/osac>

# THANK YOU!

Michael P. Kessler  
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