

The logo graphic consists of several concentric, overlapping arcs in shades of purple, blue, green, and yellow, resembling a stylized globe or a series of signal waves. The acronym 'OSAC' is prominently displayed in a bold, dark blue, sans-serif font, centered horizontally and partially overlaid by the arcs.

# OSAC

Organization of Scientific Area  
Committees for Forensic Science

## Crime Scene/Death Investigation Scientific Area Committee

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Greg Davis, Chair

# Crime Scene/ Death Investigation SAC Leadership

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**Gregory George Davis**, Chair, University of Alabama at Birmingham

**George Cronin**, Vice Chair, Pennsylvania State Police and University of Pennsylvania

**Jeremy Chappell**, Executive Secretary, Kansas City (Missouri) Police Department

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**Kenneth Aschheim**, Chair, Odontology, New York City Office of Chief Medical Examiner

**Michael Kessler**, Chair, Crime Scene Investigation, National Forensic Science Technology Center (NFSTC)

**Craig Beyler**, Chair, Fire and Explosion Investigation, Jensen Hughes

**Kenneth Furton**, Chair, Dogs and Sensors Subcommittee, Florida International University

**Thomas Holland, Ph.D.**, Chair, Anthropology, DOD Joint POW/MIA Accounting Command, Central Identification Laboratory

**Keith Pinckard**, Chair, Medicolegal Death Investigation, Travis County Medical Examiner's Office

**Jason Wiersema**, Chair, Disaster Victim Identification, Harris County (Texas) Institute of Forensic Sciences

Crime Scene/  
Death  
Investigation  
SAC  
Members  
and Liaisons

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**John Allen**, U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives

**Robert Barsley, DDS**, Louisiana State University, Health Sciences  
Center School of Dentistry

**Timothy Davidson**, Cowlitz County (Washington) Coroner's Office

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**Gerald McGwin, Jr., M.D.**, University of Alabama at Birmingham

**Peter Massey, Ph.D.**, University of New Haven, West Haven, Conn.

**Shawn Wilson**, Hennepin County (Minnesota) Medical Examiner

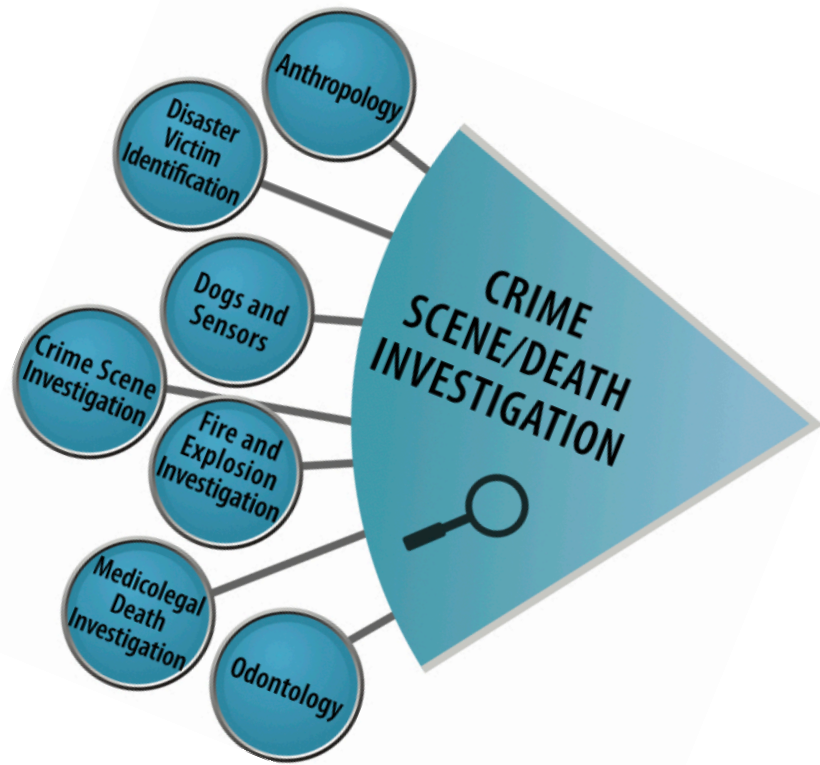
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**Ex-Officio Members - Deborah Davis, Ph.D.**, University of Nevada,  
Reno (HFC)

**D. Michael Risinger**, Seton Hall University School of Law (HFC)

**Kent E. Cattani**, Arizona Court of Appeals (LRC)

**Barbara E. Andree**, Forensic Chemist, Bureau of Alcohol, Tobacco,  
Firearms and Explosives (QIC)



## SAC Mission

Improve forensic practice by creating and promoting standard guidelines and protocols to ensure that the results of forensic analysis are reliable and reproducible.

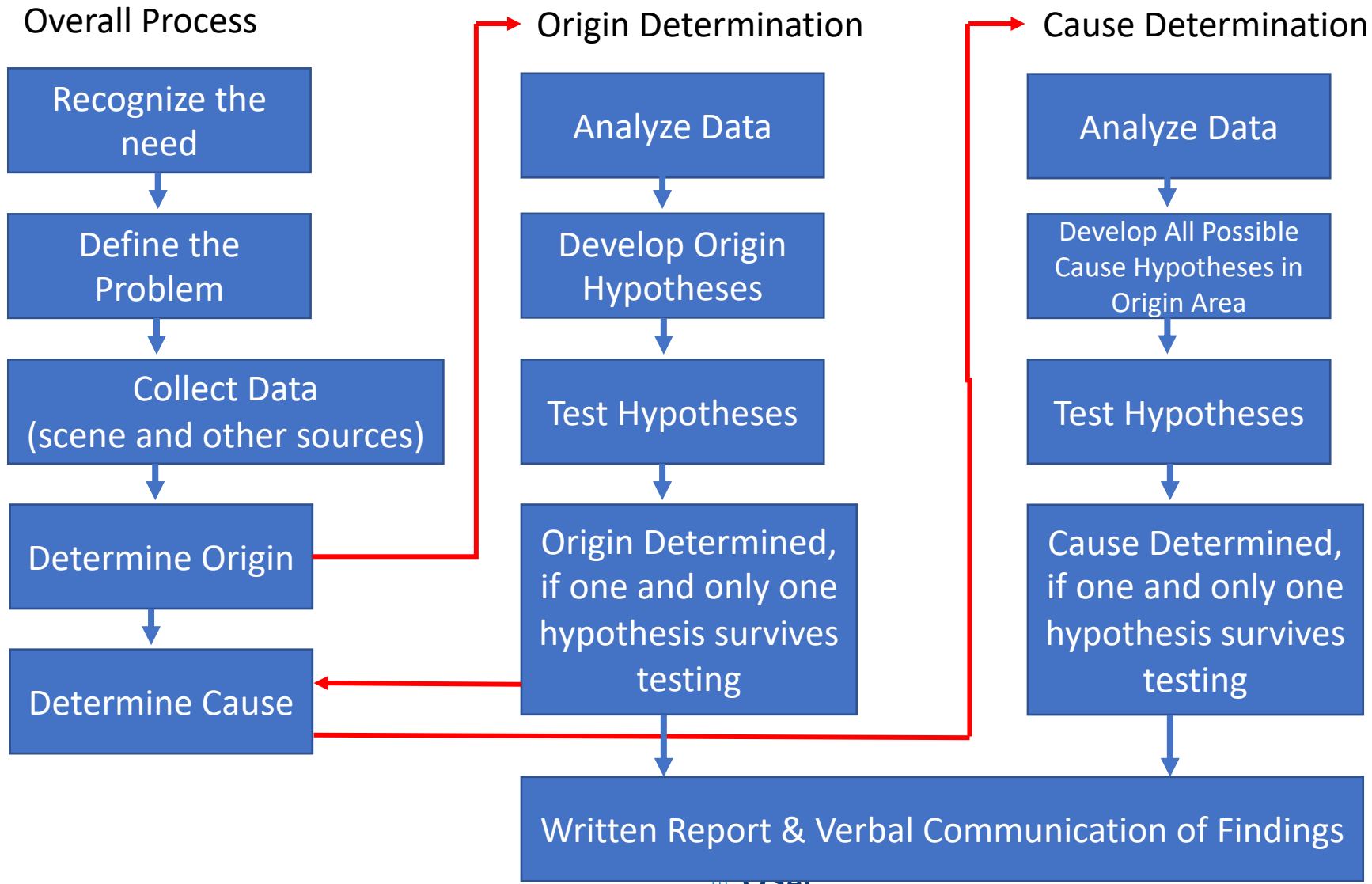
# OSAC DVI Subcommittee



- May publish 2 differently
- ASB/ANSI 4 Standard
- Draft 3 (in ASB)
- Draft 5 (in OSAC)
- NWP 6



# Roadmap for Fire and Explosion Investigation for Origin and Cause of a Fire



\* NFPA 1033:  
Qualifications

\* NFPA 921:  
Investigation  
Process

\* NFPA (upcoming):  
Fire & Explosion  
Investigation Unit  
Operations

All Apply to Entire  
Process

All Areas Bear  
Further Research  
(see Strategic Plan)



# Standards on the Registry

## Fire and Explosion Investigation

[NFPA 921:2017 Guide for Fire and Explosion Investigations](#) (Fire and Explosion Investigation Subcommittee, November 1, 2017)

[NFPA 1033:2014 Standard for Professional Qualifications for Fire Investigator](#) (Fire and Explosion Investigation Subcommittee, December 22, 2016)

## Odontology

[ADA 1058-2010D Forensic Dental Data Set](#) (Odontology Subcommittee, February 14, 2019)

[ADA 1088-2017D Human Identification by Comparative Dental Analysis](#) (Odontology Subcommittee, March 7, 2019)

# Standards in Process – at SDO

Standards

## Anthropology

- Best Practice Recommendations for Facial Approximation in Forensic Anthropology
- Standards for Sex Estimation in Forensic Anthropology
- Standard for Stature Estimation from Human Remains

Standards



# Standards in Process – Under Development

Standards

- Standard for Ancestry Estimation in Forensic Anthropology
- Standard for Age Estimation in Forensic Anthropology
- Standard for Anthropology Scene Detection and Processing
- Standard for Identifying and Describing Pathological Conditions and Anomalies in Forensic Anthropology
- Standard for Qualifications in Forensic Anthropology
- Standard for Determining Medicolegal Significance in Forensic Anthropology
- Standard for Skeletal Sampling and Preparation in Forensic Anthropology
- Standard for Resolving Commingled Remains in Forensic Anthropology

# Standards in Process – Under Development

Standards

## Standards

- Standard for Trauma Analysis in Forensic Anthropology
- Standard for Personal Identification in Forensic Anthropology
- Standard for Taphonomic Observations in Forensic Anthropology
- Standard for Documentation, Reporting, and Testimony
- Standard for Proficiency Testing in Forensic Anthropology

# Standards in Process – at SDO

## Crime Scene Investigation

- Standard Practice for Crime Scene Investigator Training, Continuing Education, Professional Development, Certification, and Accreditation

# Standards in OSAC Registry Approval Process

Standards

## Crime Scene Investigation (VSC 8)

- E620-11(18) Standard Practice for Reporting Opinions of Scientific or Technical Experts
- E678-07(13) Standard Practice for Evaluation of Scientific or Technical Data
- E860-07(13)e2 Standard Practice for Examining and Preparing Items that Are or May Become Involved in Criminal or Civil Litigation
- E1020-13e1 Standard Practice for Reporting Incidents that May Involve Criminal or Civil Litigation
- E1188-11(17) Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator
- E1459-13(18) Standard Guide for Physical Evidence Labeling and Related Documentation

# Standards in Process – Under Development

Standards

## Crime Scene Investigation

- Standard Practice for Documenting and Processing of Shooting Scenes for Reconstruction
- Standard Practice for the Collection and Preservation of Items That May Contain Biological Material
- Standard Practice for the Collection and Preservation of Seized Drugs
- Standard Practice for Crime Scene Reconstruction

# Standards in Process – in Registry Process

Standards

## Disaster Victim Identification

- ANSI/ASB Best Practice Recommendation 007, Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System Databases, First Edition, 2018
- ANSI/ASB Best Practice Recommendation 010, Forensic Anthropology in Disaster Victim Identification: Best Practice Recommendations for the Medicolegal Authority, First Edition, 2018

# Standards in Process – at SDO

Standards

- ASB Best Practice Recommendation 005, Mass Fatality Incident Data Management: Best Practice Recommendations for the Medicolegal Authority
- ASB Best Practice Recommendation 008, Mass Fatality Scene Processing: Best Practice Recommendations for the Medicolegal Authority
- ASB Best Practice Recommendation 094, Postmortem Fingerprint Recovery: Guidance and Best Practices for Disaster Victim Identification
- ASB Best Practice Recommendation 108, Forensic Odontology in Disaster Victim Identification: Best Practice Recommendations for the Medicolegal Authority

# Standards in Process – Under Development

Standards

- Best Practice Recommendations for Building Resiliency for Disaster Victim Identification Responders (new work product)
- Best Practice Recommendations for Quality Assurance in Disaster Victim Identification (new work product)
- Best Practice Recommendations for Managing Disaster Victim Identification Response with Chemical, Biological, Nuclear, and Explosive Trauma (new work product)
- Best Practice Recommendations for Disaster Victim Accounting (new work product)
- Best Practice Recommendations for Comparison of ID Methodologies in Disaster Victim Identification (new work product)
- Best Practice Recommendations for Mass Fatality Management Preparedness (new work product)



# Standards in Process – Under Development

Standards

- Mass Fatality Incident Data Management: Best Practice Recommendations for the Medicolegal Authority
- Media Communications: Best Practice Recommendations for Medicolegal Authorities in Disaster Victim Identification
- Ethical Considerations in Disaster Victim Identification: Best Practice Recommendations for the Medicolegal Authority
- Legal Considerations in Disaster Victim Identification
- Family Management Following a Mass Fatality Incident: Victim Information Center Best Practice Recommendations for Medicolegal Authorities
- Disaster Victim Identification Process: Best Practice Recommendations for the Medicolegal Authority
- Forensic Odontology in Disaster Victim Identification: Best Practice Recommendations for the Medicolegal Authority

# Standards in Process – Under Development

Standards

## Dogs and Sensors

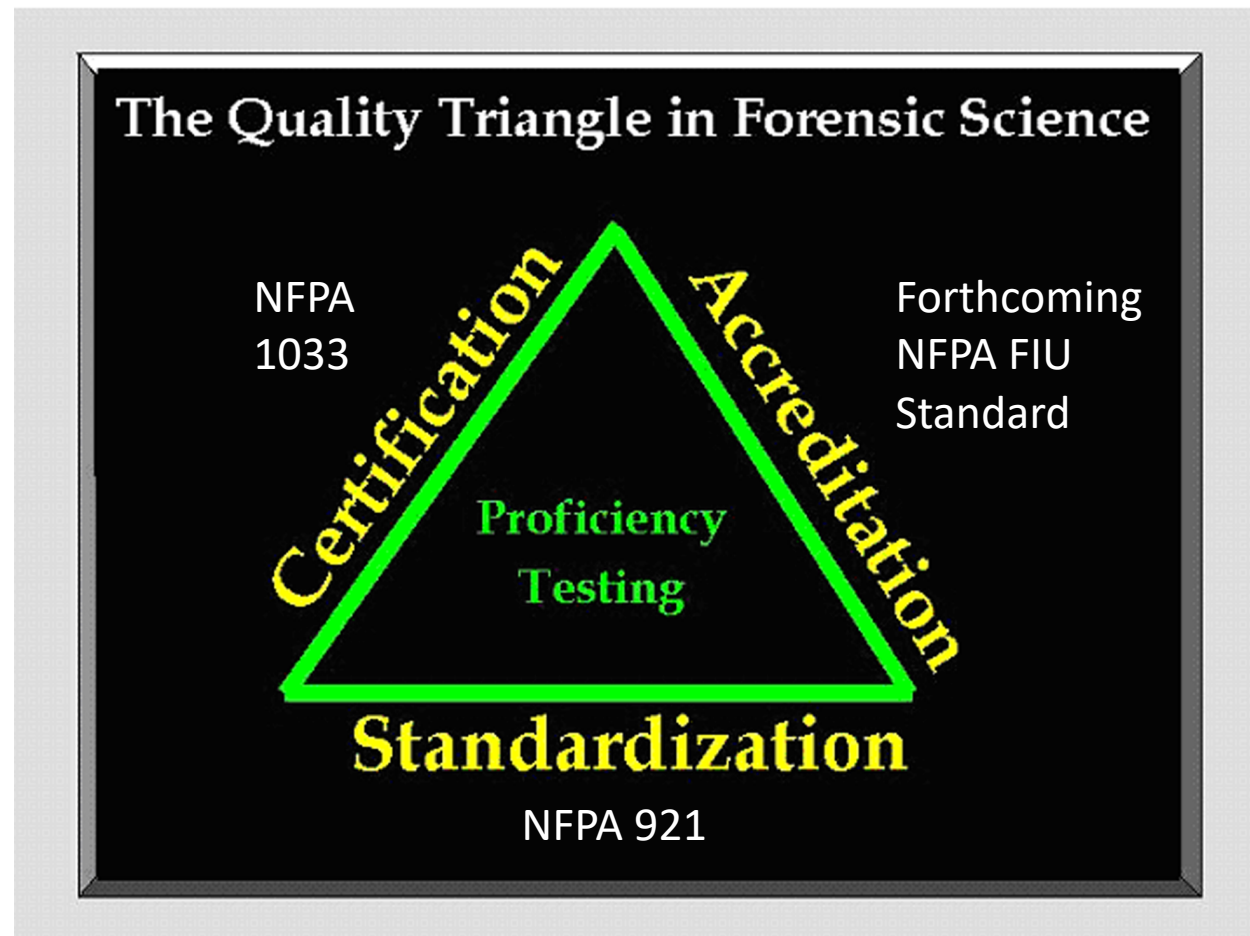
- General Guidelines (ready for comment)
- Terms and Definitions (ready for comment)

## Leading towards

- Selection of handlers/career field progression
- Selection of dogs/kenneling
- Court evidence
- Application of dogs in specific circumstances (e.g. accelerants, explosives, human rescue, illicit drugs, etc.)

# Standards in Process – at SDO

- NFPA Standard for the Organization and Operation of Fire Investigation Units (FIU)



# Work in Process – Under Development

- Strategic Plan for Fire and Explosion Investigation
- Template Quality Manual for FIU's in development to facilitate individual FIU's development of their own Quality Manual and eventually seeking accreditation to the forthcoming NFPA standard

# Standards in Process – at SDO

## Medicolegal Death Investigation

- Organizational and Foundational Standard for Medicolegal Death Investigation (ASB)

Standards

Under development

- Standard for capturing common data elements in medicolegal death investigations (working title)

Standards in  
Process – at  
SDO

## Odontology

### Proposed American Dental Association Standard No. 1077 Human Age Assessment by Dental Analysis

#### **SCOPE**

This document specifies the methodologies and best practices for estimating the chronologic age of a living or deceased individual by analysis of the human dentition and associated maxillofacial structures.

Standards

# Standards in Process – at SDO

Standards

## Odontology

### Proposed ISO 20888 Dentistry — Terminology for Forensic Oro-Dental Data

#### **SCOPE**

This international standard provides dentists and forensic dental experts with an organized system of concepts to describe the distinctive characteristics of an individual's mouth. The chosen system is based on a forensic approach of a mouth's characteristics, with many concepts specific to the identification domain that are not defined elsewhere in ISO dentistry vocabularies (e.g. "present tooth").

The hierarchical structure of the standard is designed to describe attributes of a tooth, the mouth and a prosthesis /orthosis with increasing levels of discriminative characteristics (e.g. material characteristics, restored tooth surface...) and the possibility to connect any level of description of an attribute with the most comprehensive concept.

This standard is intended to be used for data exchange between antemortem and postmortem files, without any ambiguity on the terms used to describe an individual's mouth.

# Standards in Process – Under Development

Standards

## Odontology

### Bitemark Analysis, Comparison and Reporting: Standards and Best Practices for the Forensic Dentist and Investigator

#### **Scope**

This standard provides definitions, terminology and procedures for the development of evidence identified as a pattern created by teeth. The purpose is to promote consistent methodology and reporting among investigators across jurisdictions.



Guidelines and  
Best Practices  
in Process –  
Under  
Development

Guidelines and Best Practices

Odontology

Proposed Guidelines and Best Practices for Human  
Abuse Recognition by Dental Professionals

**Scope**

This proposed guidelines and best practices report provides guidance to dental professionals to recognize abuse and neglect, and document and report those findings

# Research Needs

## Anthropology

- Controlled Experimental Bone Trauma Studies
- Healing Rates of Skeletal Injury, Especially in Children
- Stable Isotope Analysis as a Geospatial Tool for Identification
- Validation Studies of Technologies (ex. ground penetrating radar, remote sensing, and) Recovery Techniques in Forensic Anthropology
- Population Frequency Data for Radiologic Identification

# Research Needs

## Crime Scene Investigation

- 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
- Crime Scene Research: Creation of a Centralized Searchable Database
- Decontamination of Crime Scene Equipment
- Laboratory Techniques and Technologies at the Crime Scene
- Use of Technology for Crime Scene Documentation

# Research Needs

## Disaster Victim Identification

- Composite Quantification of Contextual Decedent ID Criteria
- Modeling of MFI Missing Person and Victim Data
- Understanding Cognitive Bias in DVI Operations

## Dogs and Sensors

- Development of Methods for Monitoring Levels of Contamination of Aids
- Development of Reliable Surrogate Aids
- Evaluation of Dissipation of Odorant
- Identification of Odorant Chemicals Present In and Above Targets
- Integration of Canine and Instrumental Detectors

# Research Needs

## Fire and Explosion

- Developing Tools for Evaluation of Fuel Characteristics
- Dissemination of ATF Fire Research Laboratory Data
- Documentation of Post Fire Conditions in Public Research
- Extracting Event-relevant Data from Electronic Sources
- Fire Investigation Component of Publicly Funded Compartment Fire Research - I
- Fire Investigation Component of Publicly Funded Compartment Fire Research - II
- Material Property Impacts on Fire Patterns
- Measurement and Quantification of Fire Patterns
- Potential for Reducing Bias in Fire and Explosion Investigations
- Public Distribution of Recall Data
- Repository of Fire Investigation Research
- Room Size Impacts on Fire Patterns
- Validation of Origin and Cause Determination Protocols
- Ventilation Impacts on Fire Patterns
- Witness Information for Fire & Explosion Scenes

# Research Needs

## Medicolegal Death Investigation

- Assessing the Utility of Autopsy in Contentious Medicolegal Categories of Death
- Geographic and Seasonal Variation of Postmortem Changes
- Medicolegal Death Investigator Workload Analysis
- Pediatric Forensic Pathology to Improve the Accuracy of Cause and Manner of Death Certification

# Research Needs

## Odontology

- 3D Imaging of Patterned Injuries on Human Skin
- Critical Comparison of Dental Age Assessment Methods
- Development of 3D Databases of Human Dentitions
- Phenotyping of Tooth Shape and Tooth Color
- Quality & Quantity of Concordant Features Required for Human Identification
- Reliability of Bitemark Analysis Methodology
- Specific Population Studies in Dental Age Assessment



# OSAC

Organization of Scientific Area  
Committees for Forensic Science

Thank you

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