American Academy of Forensic Sciences
American Society of Crime Laboratory Directors
International Association for Identification
International Association of Coroners and Medical Examiners
National Association of Medical Examiners
Society of Forensic Toxicologists/ American Board of Forensic Toxicology

CFSO

Consortium of Forensic
Science Organizations

11/7/22

National Institute of Justice (NIJ) Listening Session- CFSO

The CFSO member organizations include the American Society of Crime Lab Directors, the American Academy of Forensic Sciences, the International Association for Identification, International Association of Coroners and Medical Examiners, the National Association of Medical Examiners, the Society of Forensic Toxicologists, and the American Board of Toxicologists represent over 22,000 forensic science practitioners and forensic medicine practitioners at all levels of government to include federal, state, county, tribal, and local. The primary focus of the CFSO is to develop a collaborative working relationship with policymakers at all levels of government as well as the United States Congress. The mission of the CFSO is to speak with a single forensic science voice in matters of mutual interest to its member organizations, to influence public policy at the national level, and to make a compelling case for increased federal funding for public forensic science service providers and public forensic medicine service providers including medical examiner and coroner offices. In presenting our position, we provide policymakers with the supporting data, which demonstrates a universally under resourced system to include a lack of personnel, while the demand for services continues to increase daily.

The CFSO supports the efforts of NIJ's Forensic Science Strategic Research Plan 2022-2026.

NIJ **Interest Area**	**CFSO Interest**
Supporting foundational research in forensic science.	• More foundational and collaborative research in pattern analysis disciplines: Firearms, Latent Prints, Footwear, Tire Tracks, Toolmarks & Trace Evidence. CFSO specifically supports black box and white box studies in these areas consistent with NIJ interest area 2.1-2.4
Advancing and maximizing the impact of applied research and development in forensic science.	• Creation of dedicated funding to implement the NIJ FLN-TWG recommendations for Next Generation LIMS Systems and other technology implementation • In conjunction with the HHS/CDC MDI-DATA WG, implementation of recommendations for ME/C Case Management Systems and local/regional/state/national electronic data exchange networks • Strategy for implementation of Forensic Investigative Genetic Genealogy into public labs and investigating agencies in collaboration with the national validation collaborative (including current NIJ funded FGG research entities)
Cultivating a diverse, highly skilled forensic science workforce.	• Research into the area of predictive success, recruitment, and development, of the workforce specifically in the areas of forensic pathology, firearms/toolmarks, toxicology, digital forensics, and specialty disciplines (e.g., trace analysis, document examination) • Research regarding accessibility to needed forensic discipline services in various areas of the country (equal access to forensic science services by law enforcement and officers of the court), and developing a strategy to remedy problem areas • Determination of the number of forensic pathologists and medicolegal death investigators presently required across the country to meet current and future demands • Research and implementation of wellness initiatives to address such issues as vicarious trauma and stress of forensic practitioners

Coordinating across the community of practice.	• Continuation of federal working groups with state, county, and local practitioner participation such as the FLN-TWG, the FSRD-TWG, and the MDI-DATA-WG. • Increased NamUs funding, increased contracting of service providers, increased resources for ME/C offices to utilize the program. • Research on the best practices for the adoption and implementation of laboratory and medical examiner/coroner standards • Conducting a Needs Assessment of Forensic Laboratories and Medical Examiner/Coroner Offices on a triennial basis • Continuation of FTCoE initiatives such as the ASCLD Accreditation Initiative, human factors and bias reduction efforts, inclusion and diversity initiatives, and continuing education and training in technology implementation

The following pages include CFSOs 2022-2024 Research Priorities (including research priorities from all CFSO members) which capture in more detail specific research needs as identified by the CFSO membership.

General Forensics	Development and validation of standardized forensic terminology, methods and conclusion statements in impressions, patterns, and trace evidence disciplines
	Development, evaluation, and validation of massively parallel sequencing techniques for whole genome sequences, partial genome sequencing, and other forensic casework applications such as proteomics
	Development, evaluation, and validation of statistical or other computational methods to augment interpretation and quantitatively assess the value and strength of forensic evidence
	Evaluation of accuracy and reliability of forensic examinations as a function of evidence quantity, quality, or complexity
	Exploring the best ways to communicate results generated through statistical or other computational methods to non-technical audiences, such as investigators, litigators, and fact- finders
	Research to support the application of evaluative reporting (likelihood ratios/expanded conclusion scales) and testimony for forensic evidence other than DNA (e.g., trace materials)
	Development of local, national, and international ground truth data sets across a range of evidence types for source and activity inferences
	Understanding the impact of various types of biases (beyond confirmation and contextual bias) on practical decision making across all practitioner types from the scene to the courtroom within the criminal justice system by exploring risk in decision-making and harnessing knowledge in other fields such as medicine, engineering and across the social sciences

Controlled Substances	Development of a standardized drying procedure for plant material to ensure consistent quantitative analysis of THC
	Error rate studies on qualitative analysis (single tests and schemes) in controlled substances
	Differentiation between THC-rich and CBD-rich cannabis plants in the field (more sensitive tests) and in the laboratory (more specific tests)
	Alternative methods beyond GC-MS to distinguish fentanyl-related substances (e.g., positional isomers, analogs) including FTIR, derivatization, color test, or other widely used forensic techniques
	Applications for DNA analysis of marijuana to identify cultivar for sourcing and linkage applications
DNA/Biology	The ability to detect and locate sufficient biological material (e.g., epithelial cells, extracellular DNA) associated with touched or worn objects, that is not visible to the eye or with alternate light sources, for downstream DNA analysis
	Explore the use of Rapid DNA instruments for crime scene samples (e.g., touch DNA, sexual assault kits) with comparisons to traditional STR-typing methods
Questioned Documents	Validation of conclusion scale in forensic document examination
Pattern and Impression Evidence	Assessment of examiners' toolmark categorization accuracy
	Development and implementation of an interoperability standard for ABIS Systems
	Development, evaluation, and validation of methods to quantitatively assess the aptitude of candidates in pattern evidence disciplines
Trace Evidence	Development of an integrated and multidisciplinary approach for the advancement of data collection, data management and data analysis to aid interpretation of trace evidence
	Comprehensive GSR persistence study
	Specific identification of shooters via GSR
	Modelling the transfer and persistence of different trace evidence materials between a range of substrates

Forensic Pathology **and** **Medicolegal Death Investigation**	The necessity of performing autopsies in particular medicolegal categories (e.g., drug intoxication, motor vehicle collision, and suicide deaths)
	An assessment of in-custody deaths regarding the determination of cause and manner of death
	Molecular genetic (DNA) testing for diseases that can cause sudden death (cardiac channelopathies, aortic dissections, other hereditary diseases)
	The use of forensic pathologist assistants in the performance of forensic autopsies
	Assessment of current and appropriate caseloads of forensic pathologists and medicolegal death investigators

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