



Volume 4: Issue 1  
January 2023



# ASCLD FORENSIC RESEARCH COMMITTEE BULLETIN

## ***FRC Hot Topics***

FRC Initiatives were highlighted via a recent CSAFE webinar. "The ASCLD Forensic Research Committee and You: A Collaboration Worth Investigating" reviewed opportunities the ASCLD FRC is creating to benefit the forensic science community. This webinar was presented by Henry Maynard, chair of the Forensic Research Committee. The recording is available [here](#).

Coming soon: We are putting together a few research-related articles to help promote awareness about Forensic Data Sharing, Research Support Agreements/Partnerships, and Human Subjects Research/Institutional Review Boards (IRB).

### FRC STRATEGIC GOALS:

- ADVANCE FORENSIC SCIENCE RESEARCH
- SUPPORT THE DEVELOPMENT OF FUTURE FORENSIC CAPABILITIES
- FURTHER CULTIVATE FORENSIC SCIENCE RESEARCH PARTNERSHIPS
- PROMOTE INFORMATION SHARING THROUGHOUT THE FORENSIC SCIENCE RESEARCH COMMUNITY
- IDENTIFY AND PRIORITIZE THE RESEARCH, DEVELOPMENT, TECHNOLOGY, AND EVALUATION (RDT&E) NEEDS FOR THE FORENSIC COMMUNITY

'Researchers Seeking Practitioners' concept to connect researchers with practitioners to promote and collaborate on research projects. If you are a researcher looking for practitioners to participate in your study, complete the project [form](#) to advertise your project to practitioners looking for research opportunities. If you are a practitioner looking to become involved in research opportunities, [search](#) the Researcher/Practitioner Collaboration Directory for projects in need of participants.

## Forensic Geology and Soil Evidence: Current status and needs in the Forensic Community

# Assessment of Forensic Footwear Impression Quality by Human Raters

Research Organization: West Virginia University  
Principal Investigator: Dr. Jacqueline Speir (with co-investigator Ms. Lily Lin)  
Email Address: [eloo49@mix.wvu.edu](mailto:eloo49@mix.wvu.edu)  
Website/URL: [https://wvu-speir-research-group.shinyapps.io/shiny\\_shoe/](https://wvu-speir-research-group.shinyapps.io/shiny_shoe/)  
Discipline: Footwear

## Solving the DNA Mixture Conundrum with Single-Cell analysis

Research Organization: Rutgers University Camden  
Principal Investigator: Catherine Grgicak  
Other Collaborators Involved: Desmond S. Lun; Ken R. Duffy  
Funding Source: National Institute of Justice  
Email Address: [c.grgicak@rutgers.edu](mailto:c.grgicak@rutgers.edu)  
Website/URL: <http://www.lftdi.com>  
Discipline: Biology/Serology  
Instrumentation Involved: Bespoke Software





## LIGHTNING TALKS

Lightning Talks are monthly talks given at lunchtime to provide the community with brief snapshots of new and emerging research. In each episode two or three speakers give brief (~7 min) talks on a themed topic. To date, there have been 21 “Lighting Talks” featuring speakers from 27 countries, reaching over 1,000 participants live and over 1,350 views online. Missed a Lightning Talk, watch a replay [here](#). Stay tuned for future Lightning Talks in 2023.



## LABORATORIES & EDUCATORS ALLIANCE PROGRAM (LEAP)

LEAP facilitates collaborative research between academia and forensic science laboratories. It provides a platform of laboratories, researchers, and students to seek projects aligning with their mutual research interests and capabilities.

83 Universities – 33 Forensic Labs

116 LEAP Partners willing to collaborate on Forensic Science Research, Development, Test & Evaluation

Research Partnership things to consider :

1. Memorandum of Understanding
2. Purpose & General Scope
3. Specific Projects/Activities
4. Funding
5. Agreement Duration, Extension, Renewal
6. Key POCs
7. Confidentiality
8. Intellectual Property/Rights
9. Institutional Research Review Process
10. Progress Review Meetings
11. Data Ownership & Protection
12. Publication/Presentation Rights & Review



Current World  
LEAP Partners (4):

USA, Canada, Australia, & Saudi Arabia

## EVALUATION AND VALIDATION REPOSITORY

A repository to compile a list of unique validations and evaluations conducted by forensic labs and universities. The listing helps foster communication and reduce unnecessary repetition of validations and evaluations to benefit the forensic community. Thirty three [evaluation/validations](#) were submitted in 2022. Our latest addition:

### **ForenSeq Kintelligence Kit, MiSeq FGx Sequencing, and Universal Analysis Software Internal Validation**

Laboratory: Signature Science, LLC – Center for Advanced Genomics

Discipline: Biology/Serology

Contact Name: Michelle Peck

Email: [mpeck@signaturescience.com](mailto:mpeck@signaturescience.com)

Web link: [here](#)

## FRC AWARDS

**Award submissions are due on March 3rd, 2023** for the ASCLD FRC Innovation Award, The LEAP Collaboration Award, and The Outstanding Evaluation/Validation Award. Be sure to attend the ASCLD Symposium in Austin, TX April 30 - May 4th to see who receives the three FRC Awards celebrating research within our forensic community! The Fourth Annual Innovation Award will recognize activities highlighting new technologies, protocols, or tools that impact the operational forensic science laboratory. The LEAP Collaboration Award recognizes an outstanding partnership between LEAP-participating academic and operational forensic laboratories. The Outstanding Evaluation/Validation Award recognizes an outstanding evaluation/validation study that has been submitted to the FRC repository.



Research is formalized curiosity. It is poking and prying with a purpose.

Zora Neale Hurston



*Renaissance Austin Hotel*

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*The FRC Bulletin is designed to highlight research related initiatives to promote awareness and further research collaborations within the forensic science community.*

*You are encouraged to submit comments and suggestions regarding this bulletin to [ASCLDFRC@gmail.com](mailto:ASCLDFRC@gmail.com)*

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## **Meet the FRC Committee**

Henry Maynard – Chair/LEAP

Kathleen Corrado – LEAP

Ed Sisco – Lightning Talks

Lisa Yoshida, Brooke Ehlers – Evaluation/Validation Repository

Ashley Hall, Tracey Dawson Green – Awards

Mandy Tinkey, Laura Tramontin – Outreach/Bulletin

Ashraf Mozayani, Henry Swofford, David Love

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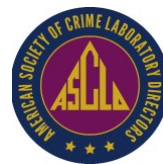






# American Society of Crime Laboratory Directors

## Research Priorities 2022-2024

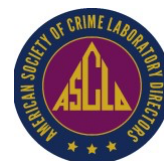


<b>General Forensics</b>	Development and validation of standardized forensic methods and conclusions in impressions, patterns, and trace evidence disciplines
	Development, evaluation, and validation of massively parallel sequencing techniques for whole genome sequences, partial genome sequencing, and 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 factfinders
	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
<b>Controlled Substances</b>	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



# American Society of Crime Laboratory Directors

## Research Priorities 2022-2024



<b>DNA/Biology</b>	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
<b>Questioned Documents</b>	Validation of conclusion scale in forensic document examination
<b>Pattern and Impression Evidence</b>	Assessment of examiners' toolmark categorization accuracy
	Development, evaluation, and validation of methods to quantitatively assess the aptitude of candidates in pattern evidence disciplines
<b>Trace Evidence</b>	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