

# National Institute of Justice

## Forensic Science Research and Development Symposium



### Agenda

**Tuesday, February 16, 2021**

The NIJ Forensic Science R&D Symposium is an open meeting where attendees can learn about NIJ-funded research across a variety of forensic science areas. American Academy of Forensic Sciences meeting registration is not necessary. Feel free to log on and listen to specific presentations or stay all day and learn about the diverse NIJ forensic science R&D portfolio. This year, NIJ will also have a poster session highlighting recent research. You can find all presentations and additional information on the [FTCoE's event page](#).



# AGENDA

## Short Agenda

### Track I

10:00–10:10	Welcome and Opening Remarks
10:10–1:50	Session I—Seized Drugs and Toxicology
2:00–2:10	Welcome and Opening Remarks
2:10–5:40	Session II—Forensic Anthropology and Forensic Pathology

### Track II

10:00–10:10	Welcome and Opening Remarks
10:10–1:40	Session I—Impression and Pattern Evidence/Trace Evidence
2:00–2:10	Welcome and Opening Remarks
2:10–5:40	Session II—Forensic Biology/DNA

## Full Agenda

**Tuesday, February 16: 10:00 a.m.–5:40 p.m. Eastern Time**

### TRACK I

10:00–1:50	<b>Session I—Seized Drugs and Toxicology</b> Moderated by NIJ Program Manager Frances Scott
10:00–10:10	<b>Welcome and Opening Remarks</b> Lucas Zarwell and Frances Scott, NIJ
10:10–10:30	<b>Rapid Forensic Identification of Psychoactive Plant Types by Multivariate Data Analysis of a DART-MS Plant Database, Featuring a User-Friendly Graphical User Interface—2015-DN-BX-K057</b> Rabi Ann Musah, University at Albany, State University of New York
10:30–10:50	<b>Increasing Safety, Speed, Sensitivity, and Selectivity of Controlled Substance Analysis—2018-DU-BX-0165</b> Amber Burns, Maryland State Police
10:50–11:10	<b>Determining the Quality of Mass Spectral Library Searches Using a Quantitative Reliability Metric—2018-DU-BX-0184</b> Preshious Rearden, Houston Forensic Science Center, Inc.
11:10–11:30	<b>Characterization of the Vapor Profile of Fentanyl and Related Analogs for Instrumental and Canine Detection—IAA-2019-20310-DC-DU</b> Laurn E. DeGreeff, Naval Research Laboratory
11:30–11:50	<b>Q&amp;A</b>
11:50–12:10	<b>BREAK</b>



TRACK I	
12:10–12:30	<b>Chemical Foundations for a Cannabis Breathalyzer: Vapor Pressure Measurements and a Pilot Breath Collection Study—NIST IAA DJO-NIJ-19-RO-0008</b> Tara Lovestead, National Institute of Standards and Technology
12:30–12:50	<b>Evaluation of Pre-Treatment Parameters in Forensic Hair Testing Using Statistical Design of Experiments (DoE)—NIJ-2018-75-CX-0037</b> Brianna Spear, Florida International University
12:50–1:10	<b>Identification of Phase II Opioid Metabolites in Human Hair—2019-DU-BX-0021</b> Megan Grabenauer, RTI International
1:10–1:30	<b>Development and Validation of Two Automated Sample Preparation Techniques for the Comprehensive Screening for Biological Matrices Using Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry: A Correlative Analysis of Drug Recognition Expert Evaluations and Forensic Toxicology Results in Suspected Driving Under the Influence of Drugs Cases—2018-DU-BX-0168</b> Rebecca Wagner, Virginia Department of Forensic Science
1:30–1:50—Q&A	
1:50–2:00—BREAK	
<b>Session II—Forensic Anthropology and Forensic Pathology</b> Moderated by NIJ Program Manager Danielle McLeod-Henning	
2:00–2:10	<b>Welcome and Opening Remarks</b> Lucas Zarwell and Danielle McLeod-Henning, NIJ
2:10–2:35	<b>A DNA Barcoding Strategy for Blow and Flesh Flies Encountered During Medicolegal Casework—2019-DU-BX-0022</b> Sam Kwiatkowski, Harris County
2:35–3:00	<b>The Impact of Drugs on Human Decomposition and the Postmortem Interval: Insect, Scavenger, and Microbial Evidence—2018-DU-BX-0180</b> Dawnie Steadman, University of Tennessee
3:00–3:25	<b>Modeling the Fluvial Transport of Human Remains in the Sacramento River, California—2016-DN-BX-0159</b> Eric Bartelink and Colleen Milligan, California State University, Chico Research Foundation
3:25–3:45—Q&A	
3:45–4:05—BREAK	
4:05–4:30	<b>Skeletal Trauma Research in Forensic Anthropology—2019-DU-BX-0040</b> Angela L. Harden, The Ohio State University
4:30–4:55	<b>Post-Mortem Iris Recognition—2018-DU-BX-0215</b> Adam Czajka, University of Notre Dame



## TRACK I

4:55–5:20     **Understanding the Pathology of Homicidal Pediatric Blunt Neurotrauma Through Correlation of Advanced Magnetic Resonance Images with Histopathology—2017-DN-BX-0145**  
Heather Jarrell, University of New Mexico Health Sciences Center

5:20–5:40—Q&A

5:40—ADJOURN

## TRACK II

10:00–1:50     **Session I—Impression and Pattern Evidence/Trace Evidence**  
Moderated by NIJ Program Manager Gregory Dutton

10:00–10:10     **Welcome and Opening Remarks**  
Lucas Zarwell and Frances Scott, NIJ

10:10–10:35     **Black Box Evaluation of Bloodstain Pattern Analysis Conclusions—2018-DU-BX-0214**  
R. Austin Hicklin, Noblis, Inc.

10:35–11:00     **Physics and Statistical Models for Physical Match Analysis Utilizing 3D Microscopy of Fracture Surfaces—2018-R2-CX-0034**  
Ashraf Bastawros, Iowa State University

11:00–11:25     **Results of the 2019 3D Virtual Comparison Microscopy Topography Resolution Study (VCMTRS)—2018-DU-BX-0216**  
Ryan Lilien, Cadre Research Labs, LLC

11:25–11:45—Q&A

11:45–12:05—BREAK

12:05–12:30     **Determining Fingerprint Age with Mass Spectrometry Imaging of Triacylglycerols—2019-DU-BX-0134**  
Young-Jin Lee, Iowa State University

12:30–12:55     **Application of Morphologically Directed Raman Spectroscopy (MDRS) for the Forensic Examination of Soils—2019-DU-BX-0017**  
Brooke W. Kammrath, University of New Haven

12:55–1:20     **Raman Microspectroscopy and Advanced Statistics for Detection and Characterization of Gunshot Residue—2016-DN-BX-0166**  
Igor K. Lednev, University at Albany, State University of New York

1:20–1:40—Q&A

1:40–2:00—BREAK





## TRACK II

### Session II—Forensic Biology/DNA

Moderated by NIJ Program Manager Gregory Dutton

2:00–2:10

#### Welcome and Opening Remarks

Lucas Zarwell and Gregory Dutton, NIJ

2:10–2:35

#### Population Distribution and Factors Affecting Individual DNA Shedding Propensity—2018-DU-BX-0203

Mechthild Prinz, John Jay College

2:35–3:00

#### Persistence of Touch DNA for Forensic Analysis—2018-DU-BX-0192

Meghan Ramsey, Massachusetts Institute of Technology Lincoln Laboratory

3:00–3:25

#### Towards Developing Forensically Relevant Single-Cell Pipelines by Incorporating Unsupervised Clustering—2018-DU-BX-0185

Ken Duffy, (Maynooth University, Ireland) Rutgers University

3:25–3:45—Q&A

3:45–4:05—BREAK

4:05–4:30

#### A Universal Method for Biological Stain Identification and Analysis Using Raman Spectroscopy—2017-DN-BX-0135

Igor K. Lednev, University at Albany, State University of New York

4:30–4:55

#### The Effect of Storage Conditions on Estimates of the Age of Dried Bloodstains—2018-DU-BX-0206

Robert Allen, Oklahoma State University Center for Health Sciences

4:55–5:20

#### An Epigenetic Multiplex Capable of Discriminating Body Fluid Type, Age, and Phenotype—2017-NX-BX-0001

Bruce R. McCord, Florida International University

5:20–5:40—Q&A

5:40—ADJOURN

