



Stop by the National Institute of Justice **booth #1111** to learn about our funding programs and take home our latest publications.

Meet NIJ program managers at the booth on Wednesday, March 20:

Frances Scott  
Controlled Substances  
Forensic Toxicology  
1:00-2:30 p.m.

Gregory Dutton  
Trace Evidence  
Impression & Pattern Evidence  
Forensic Biology/DNA  
2:00-3:30 p.m.

*\*Catch both program managers at the NIJ poster session on Tuesday, March 19 from 6:30-8:30 p.m. at Pub Pittcon.*

# How can chemists and biologists contribute to solving crime?

Find out by attending the **National Institute of Justice's symposia at Pittcon 2019**. Four oral sessions and a poster session will highlight the work of NIJ-funded researchers and others who are applying advances from the chemical and biological sciences to develop better methods of analyzing forensic evidence.



See the reverse for full session agendas

## What is NIJ?

The National Institute of Justice (NIJ) — the research, development, and evaluation agency of the U.S. Department of Justice — is dedicated to improving knowledge and understanding of crime and justice issues through science. NIJ supports external research in forensic science.

## How does R&D in the physical and life sciences support forensic examiners?

- New technology for improved evidence detection and collection
- Automated, accurate, and reliable methods of analysis
- Standards, databases, and statistics for classifying and comparing evidence

## Funding Opportunities

### 1. Graduate Research Fellowship in STEM

NIJ invites applications to support innovative doctoral dissertation research with relevance to criminal justice. Deadline: April 17, 2019

### 2. Research and Development in Forensic Science for Criminal Justice Purposes

NIJ's primary funding program for forensic science R&D solicits proposals once annually. All proposals advancing the analysis of physical evidence (with few exceptions) are invited.

Deadline: April 11, 2019

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# NIJ SESSIONS AT PITTCON 2019

Pennsylvania Convention Center in Philadelphia, Pennsylvania, March 17–21, 2019

## TUESDAY

### Innovations and Trends in Forensic Examination of Seized Drugs and Forensic Toxicology

Tuesday morning, Room 118A

- 8:30** Introductory Remarks – Frances Scott
- 8:35** The Efficacy of Electronic Cigarettes – The Public Health Challenge Became a Criminal Justice Problem – Michelle Peace, Virginia Commonwealth University
- 9:10** The Application Surface Enhanced Raman Spectroscopy for the Rapid Screening of Cannabinoids and Other Drugs in Toxicological Matrices – Bruce McCord, Florida International University
- 9:45** Development and Validation of a Blood Protein Modification Assay for Retrospective Detection of Abused Drug Exposure – Anthony DeCaprio, Florida International University
- 10:20** Break
- 10:35** Derivatization and Identification of Controlled Substances via Total Vaporization Solid Phase Microextraction (TV-SPME) and Gas Chromatography/Mass Spectrometry (GC/MS) – John Goodpaster, Indiana University – Purdue University Indianapolis
- 11:10** Towards On-Site, High-Throughput Drug Evidence Confirmation using Ambient Sampling, Portable Mass Spectrometry – William Fatigante, Illinois State University

### Emerging Analytical Methods for Chemical and Biological Forensic Evidence

Tuesday afternoon, Room 118A

- 1:30** Introductory Remarks – Gregory Dutton and Igor K. Lednev
- 1:35** Forensic Science R&D Funding Programs at the National Institute of Justice: Opportunities in Analytical Chemistry, Applied Spectroscopy and Bioanalysis – Gregory Dutton and Frances Scott, National Institute of Justice
- 2:10** Stable Isotopes to Determine Class Characteristics of Human Hair Donors and the Carrion Source of Blow Flies – Glen Jackson, West Virginia University
- 2:45** A New Tool for Fire/Arson Investigations – Hergen Eilers, Washington State University
- 3:20** Break
- 3:35** Recent Progress in Mass Spectrometry Imaging of Latent Fingerprints – Young-Jin Lee, Iowa State University
- 4:10** Raman Spectroscopy of Body Fluid Traces: Universal Method Development for the Analysis of Forensic Evidence – Igor Lednev, University at Albany, SUNY

## NIJ Forensic Science Research & Development Poster Session

Tuesday Evening, Pub Pittcon

**6:30 – 8:30** Poster Session

## WEDNESDAY

### Advancements in the Analysis of Forensic Evidence – Part I

Wednesday morning, Room 118A

- 8:30** Estimating Likelihood Ratios for the Comparison of Glass Evidence using Trace Elemental Data, Jose Almirall, Florida International University
- 8:50** Improving the Forensic Relevance of LIBS by Quantifying Spectral Interferences – Matthieu Baudelet, University of Central Florida
- 9:10** Application of Infrared Imaging and Chemometrics to Facilitate the Forensic Examination of Automotive Paints – Barry Lavine, Oklahoma State University
- 9:30** Viable, Affordable, and Meaningful Integration of Organic and Inorganic Analysis of Firearms Discharge Residue – Suzanne Bell, West Virginia University
- 9:50** Break
- 10:05** Fiber Analysis using Isotope Ratio Mass Spectrometry – Douglas Beussman, St. Olaf College
- 10:25** NIJ: Biochemical Characterization of Fingerprints for Forensic and Investigative Purposes – Jan Halamek, University at Albany, SUNY
- 10:45** Lifestyle Profiling using Metabolomics of Personal Objects – Amina Bouslimani, University of California, San Diego
- 11:05** Non-Destructive Recovery of Defaced Serial Numbers using Infrared Thermal Imaging – John Kalivas, Idaho State University

## THURSDAY

### Advancements in the Analysis of Forensic Evidence – Part II

Thursday morning, Room 118A

- 8:30** Chemometric Processing of Direct Analysis in Real Time (DART) Mass Spectrometric Data for the Identification and Classification of New Psychoactive Substances – Rabi Musah, University at Albany, SUNY
- 8:50** The Use of Gas Chromatography with Tandem Ultra Violet and Mass Spectrometric Detection for the Analysis of Fentanyl Analogs – Ira Lurie, George Washington University
- 9:10** Retrospective Identification of Synthetic Cannabinoids and Novel Opioids in Forensic Toxicology Casework using Archived Mass Spectrometry Data – Amanda Mohr, Center for Forensic Science Research and Education
- 9:30** Differences in Cannabis Impairment due to Route of Administration – Megan Grabenauer, RTI International
- 9:50** Break
- 10:05** Identification of Mitragnine and Its Metabolites using High Resolution Mass Spectrometry – Stephanie Basiliere, Sam Houston State University
- 10:25** Development of a Modern Compendium of Microcrystal Tests for Illicit Drugs and Diverted Pharmaceuticals – Meggan King, McCrone Research Institute
- 10:45** A Fully-Integrated Centrifugal Microfluidic Device for On-Site Colorimetric Detection of Explosives and Narcotics – Shannon Krauss, University of Virginia
- 11:05** A Novel Method for the Identification of Controlled Substances using Photoluminescent Indicators and Its Implementation into a Portable System for Field Use – David Nash, University of Central Florida