Learning Objectives

The main objective of these workshops is to provide high quality hands-on training in the area of “Instrumental Trace Evidence Analysis” to forensic science practitioners that work in state and local public forensic laboratories. The training will be provided at no charge to participants.

The following workshops will be provided:

1. Examination and Comparison of Glass Evidence (for beginner and intermediate examiners)
2. Mass Spectrometry for Trace Evidence Workshop (for beginner and intermediate examiners)
3. Forensic Examination and Comparison of Paint, Tapes, and Adhesives with a Focus on Interpretation of the Evidence (for intermediate examiners)
4. Elemental Analysis of Forensic Evidence with focus a on Interpretation (for intermediate and advanced level examiners)

Attendees can apply for one or more courses, depending on their specific interests and experience and on availability.

Workshop Application

The workshops are sponsored by the National Institute of Justice. Registration fees, airfare and accommodation will be provided at no charge to participants who are employed by state and local government forensic laboratories. Each class will be limited to ~12 students.

For application materials, please download the application forms at http://teaf.fiu.edu or contact Dr. Almirall at almirall@fiu.edu

Workshop Instructors

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Location

Trace Evidence Analysis Facility
International Forensic Research Institute
Department of Chemistry and Biochemistry
Florida International University
11200 SW 8th Street, OE 109
University Park, Miami, FL 33199

Funded by the National Institute of Justice (NIJ) under cooperative agreement 2010-DN-BX-K264
Each workshop will be offered for one week and will include lectures as well as hands-on laboratory-based exercises at the Chemistry and Biochemistry Department and the International Forensic Research Institute laboratories on the campus of Florida International University in Miami, Florida.

**Forensic Examination and Comparison of Glass Evidence**
*May 21st-25th, 2012*

This course will be suitable as an introduction to forensic examiners with no or little experience in glass analysis and also as a continuing education tool for intermediate-level examiners. Following the completion of this workshop, the participants will be familiar with theoretical and practical aspects of different techniques for the forensic analysis of glass such as refractive index (GRIM 3), µXRF, LIBS, LA-ICP-MS, and ICP-MS. The participants will be able to conduct a critical evaluation of limitations and capabilities of these techniques, including sampling procedures, sample preparation methods, quality control, data analysis and interpretation of results. This workshop will emphasize evidence examination and interpretation of data obtained.

**Mass Spectrometry for Trace Evidence**
*May 14th-18th, 2012*

This course will be suitable as an introduction to forensic examiners with some experience in mass spectrometry and also as a continuing education tool for intermediate-level examiners. This workshop offers a basic description of the processes and techniques involved in creating, controlling and measuring elemental or molecular ionic species by mass spectrometry techniques and its application to the analysis of forensic samples. Topics covered in the course include: a) theory of mass spectrometry, b) aiming methods of ionization, c) instrument design and operation, d) Combined Chromatography and Mass Spectrometry, e) quantitative aspects of mass spectrometry. The workshop is also designed to provide hands-on experience on the following techniques: Laser Ablation-ICP-MS, Gas Chromatography-Mass Spectrometry (GC/MS) and Liquid Chromatography - Mass Spectrometry (LC/MS) all with an aim to address the specific analytical requirements of the trace evidence examiner.

**Forensic Examination and Comparison of Paint, Tapes, and Adhesives with a Focus on Interpretation of the Evidence**
*June 25th-29th, 2012*

This course will be suitable as an introduction to forensic examiners with some experience in polymer, paint, and adhesives analysis and also as a continuing education tool for intermediate-level examiners. This course will provide a thorough introduction to the forensic examination of these materials including fundamentals on instrumental analysis (FTIR, XRD, XRF, SEM, ICP methods, Pyr-GCMS, microscopy), handling and sample preparation, manufacture and composition, end-use applications, terminology, ASTM and SWGMAT standard methods of analysis, interpretation and evidential significance, validation studies on discrimination power, databases and sample collections, report writing, and testimony. The course topics will be summarized with presentation and discussions of a series of case studies where the students will be able to apply the learning topics to the interpretation of results and forming their expert opinion.

**Elemental Analysis of Forensic Evidence with Focus on Interpretation of the Evidence**
*November 12th-16th, 2012*

Upon completion of this workshop the participants will be able to understand and review the basic principles and practical aspects of the application of different techniques for forensic elemental analysis of trace evidence. The workshop will cover the following; XRF, SEM-EDS, ICP-MS, LA-ICP-MS and LIBS. The participants will be able to conduct a critical evaluation of the limitations and capabilities of these techniques, including sampling procedures, sample preparation methods, quality control, data analysis and interpretation of results. Lectures will include a review of the fundamentals of the above techniques and their application to the analysis of different types of trace evidence such as glass, paint, soil and documents. The course will be focused on forensic aspects of statistical data treatment, match criteria, and interpretation of elemental analysis.

Electronic materials for each course will be available in the future; visit [http://teaf.fiu.edu](http://teaf.fiu.edu)