

# IAEA NUCLEAR FORENSICS RESIDENTIAL ASSIGNMENTS

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R. Kips (Lawrence Livermore National Laboratory / US Department of Energy)  
K. Treinen (Lawrence Livermore National Laboratory / US Department of Energy)  
E. Kovacs-Szeles (Hungarian Academy of Sciences - Centre for Energy Research –Budapest, Hungary)  
K. Mayer (European Commission –Joint Research Center –Karlsruhe, Germany)  
A. Apostol (Horia Hulubei National Institute of Physics and Nuclear Engineering –Bucharest, Romania)  
M. Bavio (National Atomic Energy Commission –Argentina)

The IAEA Residential Assignment places a technically qualified nuclear scientist at a leading nuclear forensic laboratory for a period of up to sixty-three working days. The goal of this IAEA program is to enhance the skills and confidence of the resident scientist performing key tasks (such as analytical measurements) in support of a comprehensive nuclear forensic examination. These skills seek to improve the knowledge and expertise available for nuclear forensic examination at the respective home organization. To date, the IAEA Residential Assignment has been hosted by the Hungarian Academy of Sciences Centre for Energy Research (MTA EK), the European Commission's Joint Research Centre (JRC) and Lawrence Livermore National Laboratory (LLNL) through support of the U.S. Department of Energy's Office of Nuclear Smuggling Detection and Deterrence (DOE/NSDD). Each host organization applied a somewhat different approach to the implementation of the IAEA Residential Assignment: MTA EK in Hungary centered its Residential Assignment around a team exercise, involving real samples (nuclear fuel pellets) and a fictitious scenarios, and covered all aspects of the investigation, starting from radioactive crime scene management through actual laboratory measurements and the use of a national nuclear forensics library (NNFL). Hungary's approach to the IAEA Residential Assignment is designed for multiple resident scientists to participate together. Nuclear scientists from Slovakia, Malaysia, Kenya, Czech Republic, Croatia, Bulgaria, Thailand, Kazakhstan and Romania have participated in the program so far. The Joint Research Centre of the European Commission in Karlsruhe, Germany, hosted Andrei Apostol, a non-destructive analysis expert from the Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH) in Romania, to participate in a scientifically-challenging source characterization project. This research resulted in a scientific publication. For the first Residential Assignment hosted by a U.S. National Laboratory, Marta Bavio, a mass spectrometrists from the National Atomic Energy Commission (CNEA) of Argentina, obtained a deepened understanding of the radiochronometry and trace elemental techniques applied to nuclear forensics samples during her 3-month Residential Assignment with the nuclear forensics group at LLNL. This research stay was framed in the context of an on-going joint sample analysis between DOE/NSDD and CNEA.

The Residential Assignment fosters new or existing nuclear forensics collaborations between the host organization and the home organization of the resident scientists. All resident scientists emphasized that in addition to advancing their analytical skills in the area of nuclear forensics, their experiences in the IAEA Residential Assignments resulted in professional and personal connections that will help them build a long-term international network of nuclear forensics colleagues. Ultimately, the IAEA Nuclear Forensics Residential Assignment is a novel approach to sustainable nuclear forensics capacity building that aims to benefit all parties involved.

## Gender

Female

## State

United States

**Author:** TREINEN, Kerri (Lawrence Livermore National Laboratory)

**Co-authors:** KIPS, Ruth (Lawrence Livermore National Laboratory); KOVACS-SZELES, Eva (Hungarian Academy

of Sciences, Centre for Energy Research); MAYER, Klaus (European Commission - Joint Research Centre, Institute for Transuranium Elements); APOSTOL, Andrei (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering); BAVIO, Maria (National Atomic Energy Commission –Argentina)

**Presenter:** TREINEN, Kerri (Lawrence Livermore National Laboratory)

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