

**7th Annual LLNL/LPC Science and Engineering Seminar
Theory to Practice: How Science Gets Done**

Forensic Science in Crisis - How Proteins Can Help

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Thursday, November 3
6:00 - 7:15 pm
Building 2400, Room 2420

Free and open to the public

Abstract: The Forensic Science Center (FSC) at Lawrence Livermore National Laboratory (LLNL) is a multidisciplinary center focused on the development of new science-based approaches to forensics. In the last decade, the scientific foundations of a number of traditional forensic methods have come under increasing criticism by the scientific community, leading to their discontinuation or reduced effectiveness in criminal prosecutions. This is a fact that has been recognized at the highest levels of government. These challenges, raising questions about the admissibility of this type of evidence in current cases and the validity of previous convictions, are rapidly leading to a watershed moment for forensic science. We will discuss the basis of these issues and describe some of the work ongoing at LLNL to try and address some of them. In particular we will describe an entirely new science-based approach to human identification.



Dr. Bradley Hart is the Director of the Forensic Science Center at Lawrence Livermore National Laboratory (LLNL). He graduated from The University of Kansas in 1996 with a B.S. in chemistry, then received his Ph.D. in 2001 from the University of California, Irvine. He began his career in 2001 as a post-doc at LLNL in the Chemistry and Materials Science Directorate. He served as a staff scientist in the FSC from 2003-2008 at which point he left the laboratory to serve as a branch chief within the Department of Defense. While there, he was responsible for the planning and oversight of worldwide CBRNE/Biometric collection and exploitation operations. He developed, established and oversaw the operation of multiple forensic exploitation laboratories both inside and outside of the continental United States. Brad returned to LLNL in 2011 to serve as the Director of the Forensic Science Center. In this role he oversees operational sample receipt and analysis efforts as well as research related to the development and application of a variety of methodologies related to forensic science.



Deon Anex graduated with a BS in Chemistry from Louisiana State University and earned a PhD in Physical Chemistry from Indiana University. He then completed a post-doctoral appointment at the University of California at Berkeley. Deon's research has focused on combinations of physical and analytical chemistry, specifically in the areas of mass spectrometry, chromatography, microfluidics, and laser-based optical spectroscopy. His professional career includes appointments at the IBM Almaden Research Center, Sandia National Laboratories, Eksigent Technologies, and Lawrence Livermore National Laboratory. At Sandia, Deon's research focused on miniature chemical analysis systems aimed at environmental, forensic, and national security applications. In 2000 he co-founded Eksigent Technologies, which was dedicated to the development of microfluidic technologies to chemical analysis and drug delivery. After ten years with Eksigent, Deon returned to the national laboratory system, this time at Lawrence Livermore National Laboratory. He is currently in the Forensic Science Center at LLNL and works in the area of forensic chemistry applied to national security problems.