

# Forensics firm builds on genomic discovery to advance DNA-based identification

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High-tech forensics firm, Casework Genetics is applying new technology to forensic evidence enabling law enforcement labs to solve crimes with greater molecular precision and efficiency than ever before.

Dr. Kevin McElfresh, President and CEO of Casework Genetics, is presenting the technology platform and validation study findings today at the 20th International Symposium on Human Identification. Casework Genetics technology features genomic techniques developed by the Translational Genomics Research Institute (TGen) and the University of California, Los Angeles (UCLA). A copy of McElfresh's presentation, which includes highlights from the study by McElfresh and co-workers, may be found at [www.caseworkgen.com](http://www.caseworkgen.com).

Casework Genetics licensed the TGen-UCLA technology and paired it with other patents it developed allowing the Virginia-based firm to identify the DNA of individuals in complex mixtures, with an unprecedented degree of detail, even when mixed with the DNA of as many as 100 other persons.

There are nearly 20 million arrests in the U.S. annually, and police now require [DNA evidence](#) in the overwhelming majority of cases, which places increased demands on local, state and federal law enforcement labs. The data to be presented will show that Casework Genetics offers a viable solution that enables police agencies to solve many more crimes.

"Our technology allows us to make a positive identification of DNA

from crime scene evidence and overcome the challenges associated with mixed samples," said McElfresh. "The current technology being used, which is now 15 years old, often fails to yield a conclusive result on mixed samples. Fortunately, our technology solves this problem."

Casework Genetics uses a technology based on identifying DNA through the use of ultra high-density Single [Nucleotide Polymorphisms](#) (SNPs) arrays, which provide the platform for distinguishing characters within the 3 billion letters of every person's DNA. "It is by far, more exacting than the Short Tandem Repeat (STR) technology, which has represented state-of-the-art forensic technology for most of the past decade," explains McElfresh.

"This technology addresses in a practical way, the long standing problem of analyzing forensic crime samples containing DNA from multiple sources. Casework now offers the ability to process and interpret these frustratingly difficult mixture samples to provide judicially-important results," said Dr. Ron Sosnowski, Chief Scientific Officer for Casework Genetics.

Dr. David Craig, Associate Director of TGen's Neurogenomics Division and a co-discoverer of the technology, said Casework Genetics has the ability to significantly impact the field of forensic identification. Working with the collaborators at UCLA, Craig first published the genomic techniques employed by Casework Genetics in a scientific paper published last year in PLOs Genetics.

Casework Genetics is the first of several companies assisted by the Phoenix-based CatapultBio, a non-profit organization established this year to accelerate new scientific ideas, transforming them into commercial products and viable business ventures.

"Casework Genetics represents the perfect case study for what Catapult

Bio has been created to accomplish. It illustrates how we help identify important discoveries and bring together the necessary resources, including partners, technology and funding, to fill important gaps that exist in the marketplace," says CatapultBio CEO and co-founder, MaryAnn Guerra. "With TGen as a partner, we facilitated the creation of Casework Genetics in fewer than six months and are thrilled to see what has been accomplished scientifically in such a short amount of time."

"This technology has the potential to address a significant unmet need in the forensics community," said Dr. Ron King, President and Chief Scientific Officer of CatapultBio, which has helped Casework Genetics establish a business plan for its nationwide growth.

To accommodate the multi-billion-dollar forensic market, Casework Genetics plans to create 25 jobs over the next three years with an average annual salary of nearly \$89,000. As a function of the CatapultBio funding and mission to drive economic development in Arizona, Casework Genetics will be looking west for the expansion of its operations.

The leadership of Casework Genetics is highly skilled in forensic identification. Dr. McElfresh has participated in a number of high-profile forensics operations, including samplings from the 9/11 terrorist attacks, the Tomb of the Unknown Soldier and numerous airline disasters. Dr. Sosnowski holds 15 patents involving DNA analysis.

Source: The Translational Genomics Research Institute

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