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Signature Science-led team has been awarded a \$2.3M contract from IARPA to develop novel forensic identification methods that will sequence protein instead of DNA to analyze forensic samples.

Researchers from Signature Science, University of North Texas Health Science Center, and The Ohio State University will combine their proteogenomic and investigative genetics expertise to develop a new method (called Proteo-ID) for human forensic analysis based on protein sequence, enabling the forensic analysis of samples that contain little or no DNA.

URL: <http://www.signaturescience.com/press>

For immediate release

AUSTIN, TEXAS — August 08, 2018 — The Intelligence Advanced Research Projects Activity (IARPA) awarded Signature Science, LLC, a \$2.3M contract for the development of the Proteo-ID method. Proteo-ID aims to accurately identify people via protein sequencing from human skin cell samples. The Proteo-ID methodology will significantly expand human forensic analysis through the sequencing of proteins, which are stable biomolecules that contain genetic information in the form of single amino acid polymorphisms (SAPs). Detection of a panel of SAPs, which are directly associated with single nucleotide polymorphisms (SNPs) in the human genome, will allow human identification at random match probabilities of less than 1 in a billion.

While DNA sequence analysis remains the predominant method used for human identification, DNA can naturally degrade in the environment or be entirely absent from anucleate cell types such as hair or keratinocytes. In such cases, the abundance and robustness to environmental insults of proteins position them as an ideal matrix for forensic analysis. To this end, the Signature Science team will develop and optimize the Proteo-ID method in parallel across two thrust areas: 1) discovery, detection, and identification of genetically variable peptides (GVPs) that contain SAPs to calculate random match probabilities for human samples; and 2) efficient sample preparation techniques to collect and extract protein from touch skin samples with low cell count.

Signature Science has assembled a multi-disciplinary team comprised of molecular biologists, biochemists, geneticists, bioinformatics specialists, analytical chemists, statisticians, computer programmers, and software engineers. The team includes

leaders in the field of proteogenomics (The Ohio State University) and investigative genetics (University of North Texas Health Science Center).

About Signature Science, LLC

A subsidiary of the Southwest Research Institute, Signature Science, LLC, is a scientific and technical consulting firm providing multi-disciplinary applied research, technology design and development, and scientific, technical and operational services to government and industry.

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