

DIRECT HIGH-THROUGHPUT SEQUENCING AND GENEALOGY ANALYSIS FOR PERSONAL IDENTIFICATION

Richard Green, University of California, Biomolecular Engineering

Recently, a casket bearing the remains of a child was unearthed during a home renovation project in San Francisco. Using rootless hairs cut from the child's head, we recovered and sequenced DNA using protocols developed for ancient DNA analysis. In parallel, a team of genealogists and historians identified a panel of possible descendants by analyzing cemetery maps from the region of San Francisco where the casket was found, genealogy records and other historical records. We collected DNA samples from possible living descendants for comparison to the DNA recovered from the child. I will describe the development and application of several *ad hoc* genetic comparisons performed to establish the identity of the child. I will also describe the laboratory and analytical procedures and how they can be generalized for personal identification from minute quantities of DNA.