

## **RAPID RE-IDENTIFICATION OF HUMAN SAMPLES USING PORTABLE DNA SEQUENCING**

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DNA re-identification is used for a broad suite of applications, ranging from cell line and tissue authentication to crime scene sample identification. However, current re-identification schemes suffer from high latency. We developed a rapid, and portable strategy to re-identify human DNA, called “MinION sketching”. Using data from Oxford Nanopore Technologies’ sequencer, MinION sketching requires only 3min of sequencing and 60-300 random SNPs to identify a sample, enabling near real-time applications of DNA re-identification. Hands-on preparation of the samples can be reduced to <1 hour. We re-identify individuals using sparse reference files as generated by Direct-to-Consumer companies. Our method potentiates application of MinION sketching for border control, on-site crime scene re-identification of DNA samples and rapid identification of victims after a mass disaster.