National Institute of Justice

Award Title: Population Genetic Issues for Forensic DNA Profiles	
Award Description: This research considers the following topics: (1) Relatedness and Inbreeding- Related individuals have similar profiles, although the current panels of forensic STR markers do not allow distinguishing among different classes or relatedness. The implications of adding lineage markers, more STR markers, or SNP markers will be explored. Tests of relatedness, as opposed to calculating likelihood ratios for specified degrees of relatedness will be developed. (ii) Population Structure - The interpretation of matching DNA profiles was improved by the 'theta-correction'. It is proposed to clarify the meaning of 'theta' and to develop appropriate estimates to replace current ad-hoc assumed values. Use will be made of an extensive collection of published allele frequencies from around the world. (iii) Lineage Markers - Mitochondrial sequence and Y-chromosome STR data have the potential of improving relatedness inference, familial searching and the recovery of forensic profiles from degraded samples. It is proposed to work further to remove current uncertainty on how to quantify the evidential strength of these lineage markers when the profiles of interest have not been seen in a database. (iv)Mixtures - As DNA typing technology becomes more sensitive, it is more likely that evidentiary samples contain DNA from multiple contributors. ca/ncf	
Awardee Name: University of Washington	**Award Number:** 2011-DN-BX-K541
Solicitation Title: NIJ FY 11 Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes	**Fiscal Year:** 2011
Amount: $1,269,456.00	**Earmark:** No
Recovery Act: No	**State/Territory:** WA
County: King	**Congressional District:** 07
Award Status: Open	