

**EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]:** State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

More than 300,000 threatened, attempted or completed sexual assaults occur annually in the United States. In California alone specifically there are over 20,000 unsolved sexual assault cases reported. These statistics indicate that it is imperative to provide a deterrent to those committing sexual crimes as well as develop rapid methods of solving these crimes. In the past decade, DNA typing has provided a useful deterrent to violent criminals in the United States. The ability to type DNA from biological evidence is one of the most important developments in forensic science since the advent of fingerprint analysis. The technology today includes a variety of genetic markers, DNA typing strategies, computers and software. Additionally the ability to separate and identify the male component of a mixture is invaluable for many sexual assault cases. Using male chromosome specific primers can improve the chances of detecting low levels of the perpetrator's DNA in a high background of the female victim's DNA. Recently two commercial companies have launched male specific polymorphic short tandem repeat (STR) multiplex kits, while one is in development. Further characterization of these STR multiplexes is necessary to evaluate their usefulness in forensic applications especially since these multiplexes have not been tested against "real world" casework samples. The present study will use previously adjudicated sexual assault samples to test the ability of these multiplexes to detect male DNA.