H67 Death on America's Southern Border: A Summary of Five Years of Genetic Data Acquisition and Analysis of the Reuniting Families Project

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After attending this presentation, attendees will have a greater understanding of the issues involved with the identification process of deceased undocumented immigrants in the United States. In addition, attendees will hear a summary of the cases submitted to Reuniting Families for the past five years. The data obtained from HV1 and HV2 mtDNA analysis performed for these cases will be discussed. Of particular focus will be the mtDNA variation across Latin America and the utility of this data in future identification of remains.

This presentation will impact the forensic community and humanity by providing valuable insight into the genetic variation of the undocumented immigrant community, its reflection of the larger source populations of Latin America, and its ability to aid forensic scientist in the identification and repatriation of these persons.

Significant numbers of undocumented immigrants enter the United States each year. According to the Pew Hispanic Center, the average number of people entering the United States illegally was 800,000 per year from 2000-2004 and 500,000 per year from 2005-2008. Roughly 77% of illegal entrants are Hispanic with 59% from Mexico, 11% from Central America and 7% from South America. While accurate statistics are difficult to ascertain, it is appropriate to assert that hundreds of these migrants die each year entering the United States from the southern border. Conservative estimates of deaths due to illegal immigration typically exceed 300 per year, with the U.S. Border Patrol reporting 472 for 2005, for example. Due to a tightening of border security that began in the 1990s, undocumented entry into the United States is confined to areas of desolate, inhospitable terrain. As a result, the remains of many illegal entrants that die along the 2,000 mile U.S./Mexico border are not found for weeks or months if at all. The efforts of migrants to conceal their identities, the large number of migrants per year and the delayed recovery of remains make the identification process for deceased undocumented border crossers extremely challenging.

In 2003 efforts began at Baylor University to assist in the identification process of undocumented immigrants by establishing the Reuniting Families project. In 2004, an online database was launched and cases for DNA analysis were accepted. In 2005, the project teamed with Mexico's Secretaría de Relaciones Exteriores to launch a new database, Sistema de Identificación de Restos y Localización de Individuos, or SIRLI, in an attempt to facilitate efforts of locating missing Mexican citizens abroad, both living and deceased. Since 2004, Reuniting Families has analyzed the mtDNA from the remains of 301 individuals believed to be undocumented immigrants. The samples submitted consist of 294 bone samples, 5 tooth samples, 1 hair, and 1 dried blood sample. The project has identified 69 individuals to date with several tentative identifications pending further analysis.

The data has reached the critical mass required to appropriately analyze the genetic diversity of the source populations from which these cases are derived. Briefly, the majority of cases that have been genetically characterized have mtDNA types that fall into modern American Indian variation. In rank order, the majority of samples are from mtDNA haplogroup A and the next largest haplogroup is B. Very few samples fall outside of one of the 4 major American Indian haplogroups. In addition, the attempted use of this data will be discussed in order to speculate on the origin of unknown samples. By understanding the genetic diversity of the source populations that contribute to the undocumented migrant population, an attempt has been made to pinpoint potential origins for our individuals without identity. **mtDNA, Identification, Immigration**

 ** Presenting Author*