H18 Forensic Identifications and the Complexity of Determining Biological Affinities of "Hispanic" Crania

Ann H. Ross, PhD, North Carolina State University, Department of Sociology and Anthropology, Campus Box 8107, Raleigh, NC 276958107; Dennis E. Slice, PhD, Wake Forest University, School of Medicine, Department of Biomedical Engineering, Division of Radiologic Sciences, Winston-Salem, NC 27157; and José V. Pachar, MD, Morgue Judicial, Instituto de Medicina Legal, Panama-Ancon, Panama*

The attendees will be presented with results of a three-dimensional, geometric morphometric analysis of cranial shape illustrating variability in modern Latin American populations likely associated with differing migrational histories.

This presentation will impact the forensic community and/or humanity by raising appreciation of the biological diversity of "Hispanic" populations.

The use of "Hispanic" as a classification or category does not provide an adequate biological profile because it groups together populations of varied genetic backgrounds. In the U.S., the term "Hispanic" includes all persons of Spanish speaking countries. However, in the forensic setting the use of such an umbrella term is problematic because it ignores the distinct ethnohistories and migration patterns of each geographical region. According to the 2002 U.S. Census, more than one in eight people in the United States are of Hispanic origin and are more geographically concentrated in specific regions of the U.S. than non-Hispanic Whites. These statistics could have major implications in the medicolegal setting for the identification of unknown skeletal remains.

In recent studies, the authors demonstrated that modern Cubans show a strong African affinity followed by a Spanish component and lack an indigenous Amerindian biological affinity suggesting a complete replacement of the indigenous Cuban population. Contra, Mexicans show a different biological pattern entirely, lacking both the African and Spanish components, while having a strong indigenous Amerindian affinity.

This study presents ongoing research documenting the diversity of "Hispanic" populations. In order to further investigate the regional and geographic variation of Hispanic populations, the authors present the among-sample morphological variation of modern Panamanians (n=9), Afro-Antillean or West Indian Panamanians (n=6), modern Cubans (n=23), prehistoric Cubans (n=6), Prehistoric Ecuadorians (n=13), Spanish (n=30), Mexicans (n=31), American Whites (n=52), and Terry Blacks (n=18) using landmark-based Procrustes superimposition from the geometric morphometry. Twenty-three standard craniometric landmarks were used to reflect the among-group variation. A Microscribe G2X® digitizer was used to collect the coordinates using the software *Three Skull*, developed by Stephen D. Ousley.

A nonparametric MANOVA comparing the sum-of-squares accounted by group membership to that of 999 random permutations of group membership detected significant group differences. In addition, an Unweighted Pair Group Method with Arithmatic Mean (UPGMA) clustering analysis was performed from the generalized squared distance matrix to characterize relative shape similarities between the groups. Terry blacks, modern Cubans, Spanish, and American whites form a cluster distinct from the Ecuadorian, Mexican, Panamanian, and West Indian Panamanians samples. Interestingly, the West Indian Panamanians are more closely related to groups with strong Amerindian affinities rather than African affinities.

The majority of the Panamanian population is mestizo or admixed (Amerindian and Spanish or Amerindian, Spanish, West Indian, and Chinese). Panama's history has been shaped by its unique geography. First exploited by the Spanish as the crossroads and point of transfer for the gold, making its way from South America to Spain and, more recently, by the building of the Panama Canal. During the construction of the canal, Panama saw a large influx of West Indians and Chinese immigrants brought as laborers, which had a lasting impact on the country's genetic make-up.

Notably, these results further support that populations broadly grouped together as "Hispanics" are not all the same and emphasize the importance of investigating regional or geographic morphological variations while taking into account the unique ethnohistorical origins of Hispanic populations. Incorporating these unique patterns of variation along with census/demographic data into forensic practice could substantially aid in the identification of unknown skeletal remains.

Forensic Anthropology, Hispanic Populations, Geometric Morphometrics

 ** Presenting Author*