

### **H36 Population-Specific Identification Criteria for Cuban Americans in South Florida**

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The goals of this research project are to present results of 3-D scaling procedures for the mid-face of Latin American populations and discuss how they relate to the identification of unknown human crania.

Learning Objective: to present results of 3-D scaling procedures for the mid-face of Latin American populations and discuss how they relate to the identification of unknown human crania.

Identification criteria, specifically discriminant function formulae derived from traditional craniometrics, currently used in South Florida for Cuban Americans and other “Hispanic” groups, are unsuitable to provide adequate biological profiles due to complex biological histories as well as widely diverse geographic origins. Florida’s total population is approximately 16 million (15,982,378) individuals. Of the total population 2,682,715 or 16.8 percent % are self-identified as “Hispanic.” South Florida (herein defined as Miami-Dade, Broward and Collier Counties) is home to 60 percent % of the total Hispanic population of Florida with 1,291,737 (48.15 percent %) residing in Miami-Dade County.

The Hispanic population of Miami-Dade County makes up 57.0% percent of the total population of 2,253,362 million. Each recognized sub-group of Hispanics (Mexican, Puerto Rican, and Cuban) includes its own geographic point-of-origin and population history. Cuban-Americans (arriving in the late 1950’s and early 1960’s) make up the largest subpopulation of Florida’s Hispanics in any county and in Miami-Dade number 650,601 or 50.51 percent of the total Latin population. The arrival of over 124,000 Marielitos between April and September of 1980 greatly increased the phenotypic (and geographic) diversity among South Florida’s Hispanic groups. Additionally, as in other agricultural states, Florida has a very large population of un-documented workers who primarily arrive from Texas and points south of the Straits of Florida.

Thus, the application of the available traditional craniometric and non-metric methods are not appropriate for South Florida’s Latin population. In order to address this issue in relation to South Florida’s Cuban population, we present an analysis of the among-sample shape - cranio-facial shape variation within and among a 19th Century Cuban sample (N=20), 17th Century Spanish sample (N=94), a prehistoric Cuban sample (N=22), and Terry Blacks for comparison using methods from the geometric morphometry geometric morphometric methods. Procrustes superimposition and the thin-plate spline (tps) approaches analysis (a deformation based technique) were applied to investigate levels of admixture in contemporary Cubans. A Microscribe 3-D digitizer was used to collect Cartesian coordinates for 25 homologous cranio-facial landmarks using the software *3-Skull-FORDISC*, developed by Stephen D. Ousley.

Following After digitizing the skulls, it was necessary to translate, scale, and rotate each configuration of points so that all skulls would be of comparable size, location, and orientation. To perform these transformations, a generalized least squares (or GLS) approach superimposition was used that minimizes the sum of squared distances between homologous landmarks for all skulls. The GLS superimposition and tps analysis were performed by using

*Morpheus et al.*, a cross-platform program written by Dennis E. Slice, which is available for downloading from the SUNY-Stony Brook Morphometrics homepage. The significant biological shape differences are presented using 2-D graphical representations. Sample covariance structure was compared and In addition, a non-parametric MANOVA was performed on the scaled, translated, and rotated coordinates to test for among-group variation mean shape differences. Significant biological shape differences and patterns of variation are presented using 2- and 3-D graphical representations.

### **Identification Methods, 3-D Coordinate Data, Hispanic Populations**