



## Physical Anthropology Section – 2009

### H108 Non-Metric Trait Expressions Most Prevalent in Undocumented Border Crossers of Southwest Hispanic Descent From the Pima County Office of the Medical Examiner

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The goal of this presentation is to inform attendees about the prevalence of certain non-metric traits in Hispanic individuals found in the desert near Tucson, Arizona.

This presentation will impact the forensic community by presenting a suite of features that can help characterize individuals of Southwestern Hispanic ancestry.

One of the foremost goals of forensic anthropology is to obtain a positive identification for a set of remains. This process begins with the assessment of the biological profile, including sex, age, stature, and ancestry, that can be used to delimit the list of missing persons that may potentially match the John or Jane Doe. While methods for determining sex, age, and stature have been standardized and accepted by the scientific community, ancestry remains a subject of contention. Much of this controversy is related to the stigma surrounding the subject of race and the reality that biological races do not exist. Although humanity varies along a continuum, ancestry is a socially assigned category that is based on an individual's physical appearance. While forensic anthropologists recognized this fact, they also realize the utility of such assessments as descriptive aides in the forensic context.

The issue of ancestry is further complicated by admixture that increasingly blurs the already arbitrary lines separating groups. One particular group that is characterized by admixture is Hispanics whose gene pool consists of variable influences from American Indian, Caucasian, and African ancestries. With this group rapidly growing and becoming the largest minority in the United States, it is important that forensic anthropologists can accurately classify these individuals. In 2008, Birkby *et al.* published a paper describing the nonmetric skeletal traits that were utilized at the Pima County Office of the Medical Examiner (PCOME) to identify Southwest Hispanic ancestry in the biological profile of undocumented border-crossers (UBCs). These traits include: shoveling of the anterior teeth, anterior malar projection, a short occipital shelf, less elaborate nasal sill, partial or no oval window visualization, molar enamel extensions, nasal overgrowth, a wide zygomatic frontal process, and femoral platymeria in the subtrochanteric region.

The goal of this investigation is to evaluate the prevalence of the traits proposed by Birkby *et al.* in identifying Southwest Hispanics. In addition, other nonmetric traits were also scored to assess how commonly they occur in this group. Overall, 28 nonmetric traits were scored on the remains of 65 suspected UBCs from the PCOME. These traits included nine traits from Birkby *et al.* (2008), 12 traits from Hefner (2007), and several others from multiple sources. The frequency of these traits was then evaluated in order to ascertain their prevalence in populations of Southwest Hispanic descent.

Results indicate that all of the trait expressions described by Birkby *et al.*, except for nasal overgrowth, occurred in higher frequencies in the sample than alternative manifestations of those features. In addition, it was found that other traits may also be characteristic of those of Southwest Hispanic ancestry, like the presence of Wormian bones, venous markings, moderate interorbital breadth, lack of post-bregmatic depression, and moderate posterior zygomatic tubercle.

Establishing a suite of features that can be used to identify individuals of Southwest Hispanic ancestry is an important endeavor to aid in the identification of a growing group of people in the United States. Despite the admixed nature of this group, certain trait expressions hold potential to accurately assess their ancestry.

#### Nonmetric Traits, Ancestry, Southwest Hispanics