We calculate the "posterior probabilities" of each individual for belonging to a deccennial age category by using the jackknife resampling strategy. When the chosen threshold of posterior probability is 0.75 on 2 adjacent age categories at the maximum, the successful rate of age assessment of 80%. A second data set from Black Americans (n=51) in the same collection was tested, using the White sample as the predictive population, with similar results. The Bayesian predictive approach permits estimation of age at death with greater confidence without losing accuracy.

Reconstruction of stature from long bones in Native American populations. T. M. SCHOBER, Department of Anthropology, University of Florida, Gainesville, 32611.

The variation in body proportions of Native Americans is generalized when we use a single set of linear regression formulae from a geographically and genetically distinct reference population for stature calculation. It is widely assumed that either the most statistically robust regression equations (e.g., Trotter and Gleser 1952, 1977, American Whites) or those based on indigenous North American samples (e.g., Genovés 1967) will provide the least biased results for Native American skeletal material. Unfortunately, it will never be possible to develop regression equations for specific Native American populations because the large cadaver samples necessary simply do not exist. This study proposes a statistical way of evaluating existing reference populations that will both increase our understanding of the diversity of body proportions between Native American groups and provide an objective means of choosing from stature regression equations available in the literature.

This study evaluates heterogeneity of Native American body proportions using maximum long bone lengths from five large, geographically discrete archaeological samples. I collected maximum lengths of the femur, tibia, humerus, and radius for each complete adult skeleton from the following sites/components: 1) Schild, Mississippian (n=97), 2) Pete Klunk, Middle Woodland (n=49), 3) Arikara, proto-historic (n=128), 4) Nunavut Inuit, historic (n=100), and 5) Ancon, Peru, Late Intermediate (n=76). These data are compared multivariately to all available reference populations based on American White, American Black, French, Indian, Mexican, and North and South Chinese samples. The multivariate case for each reference population is reconstituted from published means, standard deviations, and correlation coefficients. Male and female variance-covariance matrices for each reference population are pooled with similar matrices for each Native American sample. Principle components analysis is used to delineate the multivariate position of each Native American sample in relation to all reference populations.

I argue the reference population(s) that is most similar to Native American material for all major long bone lengths, regardless of genetic or geographic similarity, is the most statistically valid model for stature estimation. This study demonstrates that the diversity in Native American body proportions are not represented by a single reference population. Patterned differences in limb segment length relationships exist, and must be taken into account prior to stature estimation.

The effects of different brain indices on brain/behavior relationships: a within-species study of humans. P. THOMAS SCHOENEMANN, Department of Anthropology, University of Pennsylvania, Philadelphia, PA 19104-6398

It is well known that brain size scales with body size. Various indices have been proposed that allow for the estimation of brain size independent of body size (e.g., Jerison's "encephalization quotient" or EQ). An implicit assumption is sometimes made that these body size corrected brain measures are a better measure of inherent behavioral differences than are simple differences in absolute brain size. This may partly be due to the fact that, for both absolute brain size and brain-size-as-a-percentage-of-total-body-weight, *Homo sapiens* do not exceed other species, even though we are clearly extremely successful mammals on purely behavioral grounds. Some research, however, is consistent with the idea that absolute brain size, in and of itself, has important behavioral implications. In addition, some comparative brain/behavior studies have used indices which scale one part of the brain with the some other part (or the brain as a whole). In any case, which brain indices are the most important behaviorally is an empirical question that can only be decided with actual behavioral data: a given brain index might be more highly associated with some behavioral dimensions than it is with others, and some brain indices might be more highly related to particular behavioral dimensions than are other indices.

This raises the question of whether brain/behavior correlations in humans might differ significantly depending on how brain variables are scaled. The present study addresses this issue by assessing whether different brain indices vary with respect to their associations with different behavioral measures. Brain size (obtained from high resolution MRI) and behavioral variability (assessed through a battery of cognitive and behavioral tasks) were obtained from 72 healthy human females. Correlations were then calculated using different brain indices. The results suggest that the use of different scaling measures does not significantly affect the strength of brain/behavior associations within humans. The implications of these findings for understanding hominid brain evolution will be discussed.

A comparison of osteoarthritis in the appendicular joints of males from the Hamann-Todd and Terry Collections. J.J. SCHULTZ, C.A. Pound Human Identification Laboratory, Department of Anthropology, University of Florida, Gainesville, FL 32611.

The Hamann-Todd (HTC) and Terry Collections (TC) are used extensively as control or reference groups in many studies of biological variation and pathological analysis. In fact, they have served as essential databases for developing many of the analytical techniques used currently by skeletal