

## ABSTRACTS

sex estimation methods represented 92% of the methods used with a median methods date of 2008. Four age estimation methods represented 65% of the methods used, with a median methods date of 1987. Four ancestry estimation methods represent 97% of the methods used with a median methods date of 2005. Two stature estimation methods represent 90% of the methods used with a median methods date of 1996. Interestingly, the use of some older methods significantly increases over time, while the vast majority of recent methods gain little traction. These trends suggest the need to investigate how factors like method validation (or lack of), pedagogical traditions, and systematic access to methods training impact the selection of methods used in casework.

*This project was supported by Award No. 2018-DU-BX-0213 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice.*

### Examination of degrees of modularity in the anthropoid axial skeleton

HYUNWOO JUNG<sup>1,2</sup> and NOREEN VON CRAMON-TAUBADEL<sup>2</sup>

<sup>1</sup>Department of Anatomy, Midwestern University (AZ), <sup>2</sup>Department of Anthropology, University at Buffalo

This study examines the degrees of modularity in the anthropoid axial skeleton. It is hypothesized that hominoids will show relatively stronger degrees of modularity than other anthropoids, and that there may have been reduced constraint for the evolution of novel axial skeletal morphology in hominoids.

For this, 3D scans of the cranium, mandible, vertebrae (13 elements), and sacrum of five hominoid genera and seven Old and New World Monkey genera were used. Intrageneric variation (e.g., sex, species) was controlled by mean-standardization. Degrees of modularity were calculated as the covariance ratio coefficient (CR) using variance/covariance matrix of inter-landmark distances. CR was calculated in all possible pairs of axial skeletal elements. Spatial arrangement of taxa in low dimensional space was visualized using 2D non-metric multidimensional scaling (MDS) of Euclidean distance matrices representing the pairwise differences between the CR results among taxa.

The results supported the hypothesis as there was generally stronger degrees of modularity (i.e., lower CR) in the axial skeletal elements in hominoids than other anthropoids except *Alouatta*. In the 2D MDS results, hominoids and *Alouatta* were generally separated from other anthropoids. Thus, the results suggest that there may have been less constraint on the evolution of axial skeletal morphology in hominoids and less constraint may have pre-existed in hominoid ancestors for the evolution of novel axial skeletal morphology in

hominins. In addition, *Alouatta* may show convergent degrees of modularity to hominoids in terms of similar locomotor behaviors (e.g., climbing, bridging, and suspensory behaviors).

*This work is supported by the National Science Foundation under grant number BCS-1830745 and the Mark Diamond Research Fund of the Graduate Student Association at the University at Buffalo (SUNY).*

### The influence of locomotion and body mass on the primate ulna: new insights into behavioral postures in fossil taxa

JASON P. JUNG<sup>1</sup>, MARC R. MEYER<sup>2</sup>, JEFFREY K. SPEAR<sup>3,4</sup>, ISABELLA FX. ARAIZA<sup>3,4</sup> and SCOTT A. WILLIAMS<sup>3,4</sup>

<sup>1</sup>Biology, California State University, San Bernardino, <sup>2</sup>Anthropology, Chaffey College, <sup>3</sup>Anthropology, Center for the Study of Human Origins, New York University, <sup>4</sup>New York Consortium in Evolutionary Primatology, NYCEP

Despite exhibiting a range of specializations in locomotion most primates have a relatively generalized postcranial skeleton, enabling extensive locomotor flexibility. However, a small number of forelimb traits, including in the morphology of the ulna, exhibit strong functional signals that may provide a link between skeletal morphology and locomotor behavior. Here we evaluate ulnar shaft and proximal complex shape using elliptical Fourier analysis against locomotor pattern, body mass, and taxonomic group in a sample of 418 ulnae across 88 extant primate species. We also examine six fossil ulnae from genus *Plesiadapis*, *Theropithecus*, *Nannodectes*, *Notharctus*, and *Daubentonius*.

Principal component and factor analyses indicate that locomotion contributes to proximal complex shape across primates, but increasing body mass exerts a stronger influence on proximal complex contours. With increasing allometry the olecranon becomes progressively reduced until it is fully situated beneath the anconeal process. By contrast, locomotion has the strongest influence on ulna shaft shape across the full primate sample, particularly in primates over 6 kg.

Discriminant function analysis of Fourier descriptors place *Theropithecus* securely among the terrestrial quadruped locomotor group, although with a greater degree of arboreal adaptation than in extant *Papio*. The *Plesiadapis* fossil ulna falls close to the arboreal quadruped group, but like the remainder of the fossil sample classifies most strongly with the vertical clinger and leaper locomotor group. These results instantiate the efficacy of Elliptical Fourier analysis in mathematically modeling ulnar morphology, and its utility in helping to understand allometric, locomotor, and taxonomic variability in both extant and fossil contexts.

### Colonial Logics and Captive Bodies: Radical reckonings with question of ethics in the collection of human remains

DELANDE JUSTIN VIL

Department of Anthropology, National Museum of Natural History, Smithsonian Institution

Founded in 1999, the core mission of the Indigenous Peoples Council on Biocolonialism (IPCB) is "to assist indigenous peoples in the protection of their genetic resources, indigenous knowledge, cultural and human rights from the negative effects of biotechnology." Biocolonialist tactics mobilize the promise of science for the welfare of humankind as a facade for practices that expand legal, political, and economic domination over already forcibly marginalized communities. While this domination pertains to organic, biological matter such as land and people, many scholars advocate for it also includes the onto-epistemological sphere as well. Biocolonialism commodifies and capitalizes on the different modes of knowing and feeling undergird the foundation of multicultural life-worlds. However, while the majority of research on its destructive capacities specifically focus on Indigenous life, I argue that many similar - if not the same - practices are coerced upon the biologies of Black bodies across the African diaspora. With renewed attention to the treatment of Black people, both living and dead, as scientific matter amid calls for an African American Graves and Repatriation Act (AAGPRA), I argue for a shift in the ideological landscape of the fight against biocolonialism so that it becomes an extension of Afro-Indigenous solidarity against capitalist, colonialist, imperialist violence.

### Why ancestors haven't mattered: Received epistemic values in American Physical/Biological Anthropology impeding discipline-wide conversations around ethics

ANN M. KAKALIOURAS

Anthropology, Whittier College

This abstract is part of the symposium *Ethics in the Curation and Use of Human Skeletal Remains* and represents a paper that is the result of original historical research, not the testing of a research hypothesis. This presentation focuses on the recent history of biological anthropology, specifically the epistemic effects of the fluorescence of paleopathology in the 1960s and the consolidation of bioarchaeology as a discipline in the 1970s.

There are recent historical connections between the adoption of a processual approach in physical anthropology and the concretization of the idea that human remains are uniquely invaluable to, and exclusively for, scientific study. That is, when researchers began to seek out ever larger skeletal samples to answer their questions, they also began to construct every single bone as necessary—the irreplaceable remain of a unique