treatment-reinfection study of naturally exposed humans. We will determine the immunologic predictors of resistance to reinfection and their interrelationships with puberty. In addition, the prospective relationships among nutritional status, circulating mediators of inflammation and pubertal hormones will be examined. Baseline findings for over 500 individuals on parasitic infections, nutritional status, anemia and schistosomiasis-related morbidity will be described.

An examination of Aleut and Eskimo genetic variation: Implications for divergence estimates and migration hypotheses.

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Data from archaeology and skeletal biology support hypotheses that Eskimos and Aleuts diverged 8,000 years ago, while linguists suggest a split approximately 5,000 years ago. The estimation of this divergence, based on patterns of genetic variation, was the focus of this investigation. This research includes a study of the migrations of humans in regards to the peopling of the New World through the examination and comparison of sequence data of mitochondrial DNA (mtDNA). Mitochondrial sequences from ancient Aleut and Eskimo skeletal remains were compared to mtDNA haplotypes of modern Native Americans from Kodiac Island, St. Lawrence Island, Southwest Alaska and St. Paul Island. These data were subjected to genetic population analyses to test hypotheses regarding 1) the time of divergence for New World arctic populations, 2) whether Eskimo and Aleut populations arrived in the New World at the same time 5,000+ years ago, and 3) how many waves of migration there were into the New World.

Preliminary results from this research indicate that there was one major wave of migration into the New World. Circumarctic populations show a trend towards low nucleotide diversity, indicating a relatively recent arrival into the arctic. Preliminary results also indicate a low amount of shared alleles between Eskimos and Aleuts, reinforcing ideas about the distinctiveness of the two populations. Measures of average nucleotide diversity enabled the estimation of Eskaleut divergence from Asian populations and the subsequent estimation of the time of divergence of Eskimos from Aleuts within the New World.

Elementary technology of the wild chimpanzees of Fongoli, Senegal.

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All long-term studies (>1 year's duration) show wild chimpanzees (*Pan troglodytes*) to be tool-users. More precisely, it is species-typical of these African great apes to use tools in extractive foraging to obtain social insects for food. However, such elementary technology is not universal, so the presence/absence and relative frequency and intensity of tool use, plus the composition of tool-kits, suggests that material cultural processes are involved in this variation. Ethnology requires ethnography, so here we report new cases of fishing for *Macrotermes* termites and dipping for *Dorylus* (*Anomma*) driver ants from Fongoli, a new study site for open country chimpanzees, in southeastern Senegal. Preliminary findings show both similarities and differences between Fongoli and Mt. Assirik, another study site where chimpanzees were studied in the Niokolo-Koba National Park, Senegal, which is 60 km to the northwest.

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Vocal communication within a troop of mantled howling monkeys *(Alouatta palliata).*

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This study looked at intra-group vocal communication of male howling monkeys within a single habituated troop on the island of Ometepe, Nicaragua. Previous studies have focused on howling vocalizations between troops as a means of intertroop spacing. This study expands earlier work and examines male intragroup vocalizations within and between subgroups.

The sample troop consisted of fifteen animals; seven males, five females, and three immature. Male vocalizations were recorded for sixty hours in July-August 2003. Eleven categories of vocalizations were used (expanded from vocalizations defined by Baldwin and Baldwin (1976)), volume levels were differentiated, and distance of intragroup communication was assessed. Vocalization data was gathered by durational focal animal and group sampling, with 1,616 vocal bouts recorded. For each bout, the type of sound, behavior, proximity to, and vocal response from other animals were recorded.

Male howling monkey vocalizations were frequent and continuous throughout the day. Except when resting, the longest period with no observed vocalizations was twenty-three minutes. Vocalizations were most frequent during travel, and consistently heard when feeding, foraging, and when joining or departing the group. Almost half (47%) of vocalizations elicited or were in response to another call. These were observed between subgroups up to three hundred meters apart but were most frequently heard between animals within a thirty-meter range (93%). The majority of calls were at a diminished volume (77%). These findings suggest vocal communication within the group is an important component of male howling monkey interactions.

Peopling Melanesia: A genetic synthesis.

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The addition of many new mtDNA and Y chromosomal variation papers to the literature, in addition to new data from our own collaborations, has allowed for new insights to be drawn about the origins of the many peoples of Island Melanesia and New Guinea. Combining HV1 and HV2 sequencing with diagnostic RFLP typing and select whole mitochondrial genome sequencing has allowed us to make connections between new Melanesian haplogroups and older existing haplogroups around the world. We find the largest division between haplogroups based on whether or not a sequence is part of Macrohaplogroup M from Asia or not. While we detected many M-related hapologroups and haplotypes, nearly half were not related to M. We discuss our evidence for the associations we have discovered. The connections are quite old, so haplotypes are not shared with other regions, but haplogroups do appear to have linkages to Asia and other regions. Based on the distributions we report for these haplogroups, and their affiliations with haplogroups outside of Melanesia, we offer some scenarios for the earliest peopling of Melanesia.

Geographic patterns of nasal morphology in *Homo*.

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Nasal morphology represents a classic example of skeletal variation long depicted as reflecting adaptation to regional climatic regimes in both modern and fossil humans. Temperature, and especially humidity, have been implicated in strongly affecting nasal form, with longer, narrower and more projecting noses associated with dry, cold climates, and shorter, broader noses associated with hot, humid climates.

In this paper, we use 460 crania of known provenience from the Morton skeletal collection to test the hypothesis that nasal breadth associates with temperature and humidity across the five continents. Climatic data spanning the past 100+ years were collected for each crania's specific locality. Removing the effect of nasal height on nasal breadth via partial correlation, we confirm that human populations demonstrate a global gradient of decreasing relative nasal aperture as one moves to colder and dryer regions. However, analysis within continents reveals conspicuous exceptions to this pattern. For example, while nasal morphology on the African continent significantly associates with local climate (p=.001), no such association was found in Asia (p=.63) or in Europe (p=.74). Similar results were found using nasal index, although this parameter of nasal form is not independent of nasal height.

We suggest that observed regional patterns of nasal morphology may be explained by the effects of population history, cultural practice, and by the fact that the respiratory functional matrix is not independent of selective forces acting on contiguous functional matrices. Neandertal nasal morphology is discussed in light of these results.

The evolution of forensic anthropology in Los Angeles County, California: A 23-year perspective.

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Recovery of human remains utilizing forensic anthropologists began at the County of Los Angeles Department of Coroner (LACDOC) in 1980. This paper details the growth of forensic anthropology through use of case examples and illustrates the importance of anthropology in the forensic setting. The 23 year period of anthropological recovery is divided into three phases. The Experimental Phase (1980-1992) includes 25 searches, primarily secondary searches (return to an already-processed scene). A team approach was initiated. The need for special skills was documented and teams were structured to include specialized anthropological, archaeological, and other skilled experts. The Formative Phase (1993-1999) includes 25 recoveries, predominantly secondary searches. The skills learned during the Experimental Phase were expanded into an exploration of field techniques in anthropological recovery. It was concluded that primary recoveries should include a team with specialized skills. The Organizational Phase (2000-present) began with the formation of the Special Operations Response Team (SORT), which is composed of skilled forensic and anthropological professionals. All relevant personnel are involved in the initial recovery effort, reducing the necessity for returns to scenes. Since 2000 there have been 55 anthropological field recoveries, two secondary searches. Since 1980, anthropology has played an important role in the recovery and analysis of human remains in Los Angeles County. That role has steadily increased in importance, due primarily to the commitment of LACDOC's personnel, and the consulting anthropologists.

A geometric morphometric comparison of *Gigantopithecus giganteus* and *Gigantopithecus blacki* with implications for hominoid taxonomy and phylogeny.

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The taxonomic designation of *Gigantopitecus giganteus* has been questioned by some researchers who have claimed that the morphological differences between this material and *G. blacki*, warrant placement of the former into the separate genus, *Indopithecus*. While prior studies have used traditional analyses to examine the degree of morphometric similarity between these two forms, the application of geometric morphometrics to this problem has been relatively uncommon.

Here, we conduct a Principle Components of Shape (PCS) analysis on a GPA scaled 3D coordinate dataset collected from the mandibles of 75 extant hominoids and 24 extinct hominoid fossil casts, including both *Gigantopithecus* species. The 28 coordinate landmarks included in the study are a mixture of osteometric landmarks and a series of points that best approximate the overall shape of the mandibular corpus and symphysis.

PCS1 explains 50.13% of the variation in terms of overall corpus robusticity and symphyseal breadth, contrasting extremely robust mandibles with extremely gracile ones. PCS2 contrasts large symphyseal dimensions with small corporal dimensions and vice versa, explaining 9.80% of the variance, while PCS3 explains an additional 8.54% of the variance dealing with differences in parallel or parabolic mandibular shapes. In cases where extinct forms are associated with extant ones, they appear to group along geographic boundaries. All PCS plots demonstrate a close affiliation of the *G. giganteus* specimen with the *G. blacki* specimens, indicating that these forms share similar morphology. As a result, there is no need to place *G. giganteus* in a separate genus such as *Indopithecus*.

Adult male-immature interactions in long-tailed macaques (*Macaca fascicularis*) at Padangtegal, Ubud, Bali, Indonesia.

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We test two hypotheses explaining the occurrence of male care of infants: mating effort and the agonistic buffering. We investigated interindividual variation in the form and incidence of male-immature interaction in long-tailed macaques (*Macaca fascicularis*) of the Mandala Wisata Wanara Wana Monkey Forest, Padangtegal, Ubud, Bali, Indonesia. Using ten-minute continuous focal follows ninety-five hours of data were collected on sixteen adult males. For each focal animal we examined the frequency, direction, and proximity of social behaviors, including triadic behaviors. Unlike most other free-ranging long-tailed macaque populations, adult males affiliated with immatures regularly within this population. Grooming, play, and huddling were the most frequent forms of affiliation. Behaviors such as carrying or holding an immature on ventrum occurred less often. Significant age-related variation occurred among individual males in both the form and intensity of interactions with immatures. Older males primarily received grooming, and they huddled with immatures. Younger adult males received grooming, played, and huddled with immatures more than did older males. No overt agonistic buffering occurred, although three times triads involving two males and an immature took place. We also found little evidence to support the mating effort hypothesis, as rank predicted neither infant care nor mating success.