as well as other mammals (e.g. panda, Malayan tapir, killer whale).
Although we know surprisingly little about the genetic basis and evolution of coat coloration in primates, the genetic basis of pigmentation in mice and domestic animals is relatively well understood. In mice and domestic pigs, the presence of white hair patches is usually controlled by genes involved in the distribution of melanocyte (pigment-producing cell) precursors during embryogenesis, and white hairs generally lack functioning melanocytes. To assess whether white patches in primates have a similar proximate mechanism, we examined gene expression in the follicles of white and pigmented hair tufts from living monkeys (2 species) and lemurs (6 species) and checked for the presence of active melanocytes via quantitative RT-PCR of a melanocyte marker gene (*MITF*). For all individuals, white hair follicles showed high *MITF* expression levels, similar to those of pigmented hair, indicating that white patches in these primates have functioning melanocytes, unlike white patches in mice. Our results indicate that convergent color phenotypes (in this case white patches) observed among primates and other mammals can come about via different molecular mechanisms. Identifying the proximate bases of pigmentation is an important step toward understanding the evolution of coat color diversity in primates.

Evolution of Late Pliocene hominin midfacial morphology. An approach using three-dimensional surface registration.

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The three-dimensional (3D) morphology of the facial skeleton is complex because it comprises several curved and small localized surfaces which form may help to differentiate masticatory patterns, species and phylogenetic relationships among fossil hominins. We quantified and visualized the facial shape variation in Late Pliocene hominins using the cutting-edge computational, similarity-based methods of 3D surface fine registration and 3D inspection colour mapping.
Samples included specimens from Sterkfontein Member 4 and Kromdraai B, South Africa. For comparative purposes, we added 10 adult chimpanzees and 10 adult bonobos with equal numbers of males and females, as well as some Early Pleistocene hominins from South and East Africa. Computed tomography data were used to generate three-dimensional triangulated mesh models which midfacial components were then converted into smooth NonUniform Rational B-Spline (NURBS) surfaces. In addition to the overall study of the midface, four separate analyses were conducted, each focused on a surface patch representing an area of morphology which have raised interest in the past (*e.g.*, infraorbital region, zygomatic process, anterior pillar ...).
Preliminary results suggest that the adult midfacial remains represented in our sample from Sterkfontein Member 4 show a greater range of morphological differences when compared to the shape differences observed within each of our two extant samples (chimpanzees and bonobos). We discuss the implications of our results for the understanding of the facial differentiation and evolution among the Late Pliocene hominins (particularly, the gracile/robust lineage).
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Skeletal pathologies associated with pellagra mortality: a comparative analysis of pellagrins from the Raymond Dart and Robert Terry anatomical skeletal collections.

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This paper reports on an analysis of skeletal pathologies from 25 individuals known to have died from pellagra. Fourteen pellagrins (Black South Africans) are part of the Raymond Dart Skeletal Collection, housed at the University of Witwatersrand Medical School, Johannesburg, South Africa. A comparative sample of 11 pellagrins (African-Americans and European-Americans) is from the Robert Terry Anatomical Skeletal Collection located at the Smithsonian Institution. Both collections have available individual profiles that include age, sex, ethnicity, and cause of death.
Pellagra, primarily a niacin deficiency disease, is most often associated with high-maize/low protein diets and poverty. Both samples are drawn from historical and geographical contexts in which pellagra was common in populations whose diets were highly maize dependent. Overall, these pellagrins exhibit periostitic lesions of the lower limbs, and show a high incidence of alveolar bone loss and dental caries. This corresponds to regions where soft tissue is known to be affected by pellagra. Additional pathologies noted for both samples include: osteomyelitis, cribra orbitalia, cranial pitting, and enamel hypoplasias. A high frequency of skeletal trauma is also seen in these sub-populations.
Although neither a specific skeletal signature of pellagra or distinctive pattern between these two samples is noted, the findings do offer new insights into skeletal-based interpretations of nutrition-related health problems, and for the paleopathology of maize-dependent prehistoric and historic populations. Future research for the Terry Collection will include the histological examination of ribs to compare microstructural patterns already initially reported for the Dart Collection pellagrins (Paine and Brenton 2006).

Knowledge is Power, but Attitude is Everything: Religion and Evolution from the Other Side of the Lectern.

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With the resurgence of anti-evolution rhetoric in recent years, teaching the principles of the modern synthesis has become, on the one hand, more important and, on the other, more tricky. For biological anthropologists, the issues are exacerbated because the topic is not evolution in the general sense, but *human* evolution in the particular. Given that these issues have been contended for almost 150 years, we wondered if the teaching of evolutionary theory to current college anthropology students might be enhanced by the methods of historians, who also teach evolutionary theory.
Today, most scientists and religions accept Darwin's theory and the more complete ideas of the modern synthesis. Nonetheless, substantial misconceptions still exist in the general population and some groups remain vocally anti-evolutionary. Evolutionary theory forms the framework for most introductory classes in biological anthropology, while for historians, it serves as the starting point for the discussion of the rise of civilization in World and American history survey classes. How well we do at convincing students of the validity of the modern synthesis is unknown and what we might do to improve our presentation of these ideas remains unidentified.
In this project, we sought to harmonize historical and anthropological approaches to the teaching of evolutionary theory by evaluating the perspectives of the students exposed to these ideas. Of particular interest to us was the effect of prior knowledge, faculty attitude, and belief systems of college students on their understanding of evolutionary theory.

3Dimensional molecular modeling and comparison of human and chimpanzee chemokine receptors CCR2, CCR3 and CX3CR1.

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