References for included source data

- Alba, D. M., Almeeija, S., DeMiguel, D., Fortuny, J., Perez de los Ríos, M., Pina, M., Robles, J. M. and Moya-Sola, S., 2015. Miocene small-bodied ape from Eurasia sheds light on hominoid evolution. *Science*, **350**, 528.
- Argue, D., Morwood, M. J., Sutikna, T., Jatmiko and Saptomo, E. W., 2009. *Homo floresiensis*: a cladistic analysis. *Journal of Human Evolution*, **57**, 623-639.
- Argue, D., Groves, C. P., Lee, M. S. Y. and Jungers, W. L., 2017. The affinities of *Homo floresiensis* based on phylogenetic analyses of cranial, dental, and postcranial characters. *Journal of Human Evolution*, **107**, 107-133.
- Atwater, A. L. and Kirk, E. C., 2018. New middle Eocene omomyines (Primates, Haplorhini) from San Diego County, California. *Journal of Human Evolution*, **124**, 7-24.
- Beard, K. C., 2008. The oldest North American primate and mammalian biogeography during the Paleocene-Eocene Thermal Maximum. *Proceedings of the National Academy of Sciences, USA*, **105**, 3815-3818.
- Beard, K. C. and Wang, J.-W., 1995. The first Asian plesiadapoids (Mammalia: Primatomorpha). *Annals of Carnegie Museum*, **64**, 1-33.
- Beard, K. C., Marivaux, L., Chaimanee, Y., Jaeger, J.-J., Marandat, B., Tafforeau, P., Soe, A. N., Tun, S. T. and Kyaw, A. A., 2009. A new primate from the Eocene Pondaung Formation of Myanmar and the monophyly of Burmese amphipithecids. *Proceedings of the Royal Society of London B*, **276**, 3285-3294.
- Beard, K. C., Coster, P. M. C., Salem, M. J., Chaimanee, Y. and Jaeger, J.-J., 2016. A new species of *Apidium* (Anthropoidea, Parapithecidae) from the Sirt Basin, central Libya: First record of Oligocene primates from Libya. *Journal of Human Evolution*, **90**, 29-37.
- Beard, K. C., Ni, X.-J., Wang, Y.-Q., Meng, J. and Gebo, D. L., 2016. Dentition of *Subengius mengi* (Mammalia: Plesiadapoidea) and a reassessment of the phylogenetic relationships of Asian Carpolestidae. *Vertebrata PalAsiatica*, **54**, 181-211.
- Begun, D. R., 1994. The significance of *Otavipithecus namibiensis* to interpretations of hominoid evolution. *Journal of Human Evolution*, **27**, 385-394.

- Begun, D. R., Ward, C. V. and Rose, M. D., 1997. Events in hominoid evolution. *In* Begun, D. R., Ward, C. V. and Rose, M. D. (eds.) Function, Phylogeny, and Fossils: Miocene Hominoid Evolution and Adaptations. Springer Science, New York, p389-415.
- Bloch, J. I. and Silcox, M. T., 2006. Cranial anatomy of the Paleocene plesiadapiform *Carpolestes simpsoni* (Mammalia, Primates) using ultra high-resolution X-ray computed tomography, and the relationships of plesiadapiforms to Euprimates. *Journal of Human Evolution*, **50**, 1-35.
- Bloch, J. I., Fisher, D. C., Rose, K. D. and Gingerich, P. D., 2001. Stratocladistic analysis of Paleocene Carpolestidae (Mammalia, Plesiadapiformes) with description of a new late Tiffanian genus. *Journal of Vertebrate Paleontology*, **21**, 119-131.
- Bloch, J. I., Silcox, M. T., Boyer, D. M. and Sargis, E. J., 2007. New Paleocene skeletons and the relationship of plesiadapiforms to crown-clade primates. *Proceedings of the National Academy of Sciences, USA*, **104**, 1159-1164.
- Bloch, J. I., Woodruff, E. D., Wood, A. R., Rincon, A. F., Harrington, A. R., Morgan, G. S., Foster, D. A., Montes, C., Jaramillo, C. A., Jud, N. A., Jones, D. S. and MacFadden, B. J., 2016. First North American fossil monkey and early Miocene tropical biotic interchange. *Nature*, **533**, 243-246.
- Bloch, J. I., Chester, S. G. B. and Silcox, M. T., 2016. Cranial anatomy of Paleogene Micromomyidae and implications for early primate evolution. *Journal of Human Evolution*, **96**, 58-81.
- Bond, M., Tejedor, M. F., Campbell, K. E., Chornogubsky, L., Novo, N. and Goin, F., 2015. Eocene primates of South America and the African origins of New World monkeys. *Nature*, **520**, 538-541.
- Boyer, D. M., Seiffert, E. R. and Simons, E. L., 2010. Astragalar morphology of *Afradapis*, a large adapiform primate from the earliest Late Eocene of Egypt. *American Journal of Physical Anthropology*, **143**, 383-402.
- Boyer, D. M., Scott, C. S. and Fox, R. C., 2012. New craniodental material of *Pronothodectes gaoi* Fox (Mammalia, "Plesiadapiformes") and relationships among members of Plesiadapidae. *American Journal of Physical Anthropology*, **147**, 511-550.
- Boyer, D. M., Toussain, S. and Godinot, M., 2017. Postcrania of the most primitive euprimate and implications for primate origins. *Journal of Human Evolution*, **111**, 202-215.
- Boyer, D. M., Maiolino, S. A., Holroyd, P. A., Morse, P. E. and Bloch, J. I., 2018. Oldest evidence for grooming claws in euprimates. *Journal of Human Evolution*, **122**, 1-22.

- Cameron, D. W., 1997. A revised systematic scheme for the Eurasian Miocene fossil Hominidae. *Journal of Human Evolution*, **33**, 449-477.
- Cameron, D. W. and Groves, C. P., 2004. A systematic scheme for the Pliocene and early Pleistocene hominids. *In* Cameron, D. W. and Groves, C. P. (eds.) Bones, stone and molecules: "out of Africa" and human origins. Elsevier, Amsterdam, p105-155.
- Chaimanee, Y., Chavasseau, O., Beard, K. C., Kyaw, A. A., Soe, A. N., Sein, C., Lazzari, V., Marivaux, L., Marandat, B., Swe, M., Rugbumrung, M., Lwin, T., Valentin, X., Maung-Thein, Z.-M. and Jaeger, J.-J., 2012. Late Middle Eocene primate from Myanmar and the initial anthropoid colonization of Africa. *Proceedings of the National Academy of Sciences, USA*, **109**, 10293-10297.
- Chaimanee, Y., Chavasseau, O., Lazzari, V., Euriat, A. and Jaeger, J.-J., 2013. A new Late Eocene primate from the Krabi Basin (Thailand) and the diversity of Palaeogene anthropoids in southeast Asia. *Proceedings of the Royal Society of London B*, **280**, 20132268.
- Chester, S. G. B., Bloch, J. I., Boyer, D. M. and Clemens, W. A., 2015. Oldest known euarchontan tarsals and affinities of Paleocene *Purgatorius* to Primates. *Proceedings of The National Academy of Sciences U.S.A.*, **112**, 1487-1492.
- Chester, S. G. B., Williamson, T. E., Bloch, J. I., Silcox, M. T. and Sargis, E. J., 2017. Oldest skeleton of a plesiadapiform provides additional evidence for an exclusively arboreal radiation of stem primates in the Paleocene. *Royal Society Open Science*, **4**, 170329.
- Coster, P., Beard, K. C., Soe, A. N., Sein, C., Chaimanee, Y., Lazzari, V., Valentin, X. and Jaeger, J.-J., 2013. Uniquely derived upper molar morphology of Eocene Amphipithecidae (Primates: Anthropoidea): homology and phylogeny. *Journal of Human Evolution*, **65**, 143-155.
- De Bast, E., Gagnaison, C. and Smith, T., 2018. Plesiadapid mammals from the latest Paleocene of France offer new insights on the evolution of *Plesiadapis* during the Paleocene-Eocene transition. *Journal of Vertebrate Paleontology*, **38**, e1460602.
- Dembo, M., Matzke, N. J., Mooers, A. O. and Collard, M., 2015. Bayesian analysis of a morphological supermatrix sheds light on controversial fossil hominin relationships. *Proceedings of the Royal Society of London B*, **282**, 20150943.
- Diogo, R. and Wood, B., 2011. Soft-tissue anatomy of the primates: phylogenetic analyses based on the muscles of the head, neck, pectoral region and upper limb, with notes on the evolution of these muscles. *Journal of Anatomy*, **219**, 273-359.

- Ducrocq, S., 2001. Palaeogene anthropoid primates from Africa and Asia: new phylogenetical evidences. *Comptes Rendus Academie Science Paris, Sciences de la Terre et des planetes*, **332**, 351-356.
- Eaglen, R. H., 1983. Parallelism, parsimony, and the phylogeny of the Lemuridae. *International Journal of Primatology*, **4**, 249-273.
- Femenias-Gual, J., Minwer-Barakat, R., Marigo, J., Poyatos-More, M. and Moya-Sola, S., 2017. *Agerinia marandati* sp. nov., a new early Eocene primate from the Iberian Peninsula, sheds new light on the evolution of the genus Agerinia. *PeerJ*, **5**, e3239.
- Femenias-Gual, J., Marigo, J., Minwer-Barakat, R. and Moya-Sola, S., 2017. New dental and postcranial material of *Agerinia smithorum* (Primates, Adapiformes) from the type locality Casa Retjo-1 (early Eocene, Iberian Peninsula). *Journal of Human Evolution*, **113**, 127-136.
- Finarelli, J. A. and Clyde, W. C., 2004. Reassessing hominoid phylogeny: evaluating congruence in the morphological and temporal data. *Paleobiology*, **30**, 614-651.
- Fulwood, E. L., Boyer, D. M. and Kay, R. F., 2016. Stem members of Platyrrhini are distinct from catarrhines in at least one derived cranial feature. *Journal of Human Evolution*, **100**, 16-24.
- Gilbert, C. C., 2013. Cladistic analysis of extant and fossil African papionins using craniodental data. *Journal of Human Evolution*, **64**, 399-433.
- Gilbert, C. C., Frost, S. R. and Strait, D. S., 2009. Allometry, sexual dimorphism, and phylogeny: a cladistic analysis of extant African papionins using craniodental data. *Journal of Human Evolution*, **57**, 298-320.
- Gilbert, C. C., Stanley, W. T., Olson, L. E., Davenport, T. R. B. and Sargis, E. J., 2011. Morphological systematics of the kipunji (*Rungwecebus kipunji*) and the ontogenetic development of phylogenetically informative characters in the Papionini. *Journal of Human Evolution*, **60**, 731-745.
- Gilbert, C. C., Bibi, F., Hill, A. and Beech, M. J., 2014. Early guenon from the late Miocene Baynunah Formation, Abu Dhabi, with implications for cercopithecoid biogeography and evolution. *Proceedings of the National Academy of Sciences*, *USA*, **111**, 10119-10124.
- Gilbert, C. C., Takahashi, M. Q. and Delson, E., 2016. Cercopithecoid humeri from Taung support the distinction of major papionin clades in the South African fossil record. *Journal of Human Evolution*, **90**, 88-104.
- Gilbert, C. C., Patel, B. A., Singh, N. P., Campisano, C. J., Fleagle, J. G., Rust, K. L. and Patnaik, R., 2017. New sivaladapid primate from Lower Siwalik deposits surrounding Ramnagar (Jammu and Kashmir State), India. *Journal of Human Evolution*, **102**, 21-41.

- Gilbert, C. C., Frost, S. R., Pugh, K. D., Anderson, M. and Delson, E., 2018. Evolution of the modern baboon (*Papio hamadryas*): a reassessment of the African Plio-Pleistocene record. *Journal of Human Evolution*, **122**, 38-69.
- Groves, C. P., 2000. The phylogeny of the Cercopithecoidea. *In* Whitehead, P. F. and Jolly, C. J. (eds.) Old World Monkeys. Cambridge University Press, Cambridge, p77-98.
- Groves, C. P. and Eaglen, R. H., 1988. Systematics of the Lemuridae (Primates, Strepsirhini). *Journal of Human Evolution*, **17**, 513-538.
- Groves, C. P. and Trueman, J. W. H., 1995. Lemurid systematics revisited. *Journal of Human Evolution*, **28**, 427-437.
- Gunnell, G. F., 2002. Notharctine primates (Adapiformes) from the early to middle Eocene (Wasatchian-Bridgerian) of Wyoming: transitional species and the origins of *Notharctus* and *Smilodectes*. *Journal of Human Evolution*, **43**, 353-380.
- Gunnell, G. F., Boyer, D. M., Friscia, A. R., Heritage, S., Manthi, F. K., Miller, E. R., Sallam, H. M., Simmons, N. B., Stevens, N. J. and Seiffert, E. R., 2018. Fossil lemurs from Egypt and Kenya suggest an African origin for Madagascar's aye-aye. *Nature Communications*, **9**, 3193.
- Haile-Selassie, Y., Gibert, L., Melillo, S. M., Ryan, T. M., Alene, M., Deino, A., Levin, N. E., Scott, G. and Saylor, B. Z., 2015. New species from Ethiopia further expands Middle Pliocene hominin diversity. *Nature*, **521**, 483-488.
- Herrera, J. P. and Davalos, L. M., 2016. Phylogeny and divergence times of lemurs inferred with recent and ancient fossils in the tree. *Systematic Biology*, **65**, 772-791.
- Holroyd, P. A. and Strait, S. G., 2008. New data on *Loveina* (Primates: Omomyidae) from the early Eocene Wasatch Formation and implications for washakiin relationships. *In* Fleagle, J. G. and Gilbert, C. C. (eds.) Elwyn Simons: A Search for Origins. Springer Netherlands, Dordrecht, p243-257.
- Hooker, J. J., 2007. A new microchoerine omomyid (Primates, Mammalia) from the English Early Eocene and its palaeobiogeographyical implications. *Palaeontology*, **50**, 739-756.
- Hooker, J. J., 2012. A new omomyid primate from the earliest Eocene of southern England: first phase of microchoerine evolution. *Acta Palaeontologica Polonica*, **57**, 449-462.
- Hooker, J. J. and Harrison, D. L., 2008. A new clade of omomyid primates from the European Paleogene. *Journal of Vertebrate Paleontology*, **28**, 826-840.

- Horovitz, I., 1999. A phylogenetic study of living and fossil Platyrrhines. *American Museum Novitates*, **3269**, 1-40.
- Jablonski, N. G. and Peng, Y.-Z., 1993. The phylogenetic relationships and classification of the doucs and snub-nosed langurs of China and Vietnam. *Folia Primatologica*, **60**, 36-55.
- Jaeger, J.-J., Chavasseau, O., Lazzari, V., Soe, A. N., Sein, C., Le Maitre, A., Shwe, H. and Chaimanee, Y., 2019. New Eocene primate from Myanmar shares dental characters with African Eocene crown anthropoids. *Nature Communications*, **10**, 3531.
- Kay, R. F., 2015. Biogeography in deep time what do phylogenetics, geology, and paleoclimate tell us about early platyrrhine evolution? *Molecular Phylogenetics and Evolution*, **82**, 358-374.
- Kay, R. F. and Williams, B. A., 1994. Dental evidence for anthropoid origins. *In* Fleagle, J. G. and Kay, R. F. (eds.) Anthropoid Origins. Plenum Press, New York, p361-445.
- Kay, R. F., Fleagle, J. G., Mitchell, T. R. T., Colbert, M., Bown, T. and Powers, D. W., 2008. The anatomy of *Dolichocebus gaimanensis*, a stem platyrrhine monkey from Argentina. *Journal of Human Evolution*, **54**, 323-382.
- Kay, R. F., Gonzales, L. A., Salenbien, W., Martinez, J.-N., Cooke, S. B., Valdivia, L. A., Rigsby, C. and Baker, P. A., 2019. *Parvimico materdei* gen. et sp. nov.: a new platyrrhine from the Early Miocene of the Amazon Basin, Peru. *Journal of Human Evolution*, **134**, 102628.
- Kirk, C. E. and Williams, B. A., 2011. New adaptform primate of Old World affinities from the Devil's Graveyard Formation of Texas. *Journal of Human Evolution*, **61**, 156-168.
- Lieberman, D. E., Wood, B. A. and Pilbeam, D. R., 1996. Homoplasy and early *Homo*: an analysis of the evolutionary relationships of *H. habilis sensu stricto* and *H. rudolfensis*. *Journal of Human Evolution*, **30**, 97-120.
- Lopez-Torres, S. and Silcox, M. T., in press. The European Paromomyidae (Primates, Mammalia): taxonomy, phylogeny, and biogeographic implications. *Journal of Paleontology*.
- Lopez-Torres, S., Silcox, M. T. and Holroyd, P. A., 2018. New omomyoids (Euprimates, Mammalia) from the late Uintan of southern California, USA, and the question of the extinction of the Paromomyidae (Plesiadapiformes, Primates). *Palaeontologia Electronica*, **21.3.37A**, 1-28.
- Marigo, J., Roig, I., Seiffert, E. R., Moya-Sola, S. and Boyer, D. M., 2016. Astragalar and calcaneal morphology of the middle Eocene primate

- Anchomomys frontanyensis (Anchomomyini): Implications for early primate evolution. Journal of Human Evolution, **91**, 122-143.
- Marivaux, L., 2006. The eosimiid and amphipithecid primates (Anthropoidea) from the Oligocene of the Bugti Hills (Balochistan, Pakistan): new insight into early higher primate evolution in South Asia. *Palaeovertebrata*, **34**, 29-109.
- Marivaux, L., Ramdarshan, A., Essid, E. M., Marzougui, W., Ammar, H. K., Lebrun, R., Marandat, B., Merzeraud, G., Tabuce, R. and Vianey-Liaud, M., 2013. *Djebelemur*, a tiny pre-tooth-combed primate from the Eocene of Tunisia: a glimpse into the origin of crown strepsirhines. *PLOS ONE*, **8**, e80778.
- Marivaux, L., Adnet, S., Altamirano-Sierra, A. J., Boivin, M., Pujos, F., Ramdarshan, A., Salas-Gismondi, R., Tejada-Lara, J. V. and Antoine, P.-O., 2016. Neotropics provide insights into the emergence of New World monkeys: new dental evidence from the Late Oligocene of Peruvian Amazonia. *Journal of Human Evolution*, **97**, 159-175.
- Masters, J. C. and Brothers, D. J., 2002. Lack of congruence between morphological and molecular data in reconstructing the phylogeny of the Galagonidae. *American Journal of Physical Anthropology*, **117**, 79-93.
- Masters, J. C., Anthony, N. M., de Wit, M. J. and Mitchell, A., 2005. Reconstructing the evolutionary history of the Lorisidae using morphological, molecular, and geological data. *American Journal of Physical Anthropology*, **127**, 465-480.
- Mongle, C. S., Strait, D. S. and Grine, F. E., 2019. Expanded character sampling underscores phylogenetic stability of *Ardipithecus ramidus* as a basal hominin. *Journal of Human Evolution*, **131**, 28-39.
- Moya-Sola, S., Kohler, M. and Alba, D. M., 2001. *Egarapithecus narcisoi*, a new genus of Pliopithecidae (Primates, Catarrhini) from the Late Miocene of Spain. *American Journal of Physical Anthropology*, **114**, 312-324.
- Nengo, I., Tafforeau, P., Gilbert, C. C., Fleagle, J. G., Miller, E. R., Feibel, C., Fox, D. L., Feinberg, J., Pugh, K. D., Berruyer, C., Mana, S., Engle, Z. and Spoor, F., 2017. New infant cranium from the African Miocene sheds light on ape evolution. *Nature*, **548**, 169-174.
- Ni, X.-J., Wang, Y.-Q., Hu, Y.-M. and Li, C.-K., 2004. A euprimate skull from the early Eocene of China. *Nature*, **427**, 65-68.
- Ni, X.-J., Meng, J., Beard, C., Gebo, D. L., Wang, Y.-Q. and Li, C.-K., 2010. A new tarkadectine primate from the Eocene of Inner Mongolia, China: phylogenetic and biogeographic implications. *Proceedings of the Royal Society of London B*, **277**, 247-256.

- Ni, X.-J., Gebo, D. L., Dagosto, M., Meng, J., Tafforeau, P., Flynn, J. J. and Beard, K. C., 2013. The oldest known primate skeleton and early haplorhine evolution. *Nature*, **498**, 60-64.
- Ni, X.-J., Li, Q., Li, L.-Z. and Beard, K. C., 2016. Oligocene primates from China reveal divergence between African and Asian primate evolution. *Science*, **352**, 673-677.
- Patel, B. A., Seiffert, E. R., Boyer, D. M., Jacobs, R. L., St Clair, E. M. and Simons, E. L., 2012. New primate first metatarsals from the Paleogene of Egypt and the origin of the anthropoid big toe. *Journal of Human Evolution*, **63**, 99-120.
- Plavcan, J. M., Ward, C. V., Kay, R. F. and Manthi, F. K., in press. A diminutive Pliocene guenon from Kanapoi, West Turkana, Kenya. *Journal of Human Evolution*.
- Pugh, K. D. and Gilbert, C. C., 2018. Phylogenetic relationships of living and fossil African papionins: combined evidence from morphology and molecules. *Journal of Human Evolution*, **123**, 35-51.
- Rasmussen, D. T., Friscia, A. R., Gutierrez, M., Kappelman, J., Miller, E. R., Muteti, S., Reynoso, D., Rossie, J. B., Spell, T. L., Tabor, N. J., Gierlowski-Kordesch, E., Jacobs, B. F., Kyongo, B., Macharwas, M. and Muchemi, F., 2019. Primitive Old World monkey from the earliest Miocene of Kenya and the evolution of cercopithecoid bilophodonty. *Proceedings of the National Academy of Sciences U. S. A.*, **116**, 6051-6056.
- Rose, K. D., Rana, R. S., Sahni, A., Kumar, K., Missiaen, P., Singh, L. and Smith, T., 2009. Early Eccene Primates from Gujarat, India. *Journal of Human Evolution*, **56**, 366-404.
- Rose, K. D., Chester, S. G. B., Dunn, R. H., Boyer, D. M. and Bloch, J. I., 2011. New fossils of the oldest North American euprimate *Teilhardina brandti* (Omomyidae) from the Paleocene-Eocene Thermal Maximum. *American Journal of Physical Anthropology*, **146**, 281-305.
- Ross, C., 1994. The craniofacial evidence for anthropoid and tarsier relationships. *In* Fleagle, J. G. and Kay, R. F. (eds.) Anthropoid Origins. Plenum Press, New York, p469-547.
- Ross, C., Williams, B. and Kay, R. F., 1998. Phylogenetic analysis of anthropoid relationships. *Journal of Human Evolution*, **35**, 221-306.
- Rossie, J. B. and Hill, A., 2018. A new species of *Simiolus* from the middle Miocene of the Tugen Hills, Kenya. *Journal of Human Evolution*, **125**, 50-58.
- Rossie, J. B. and MacLatchy, L., 2006. A new pliopithecoid genus from the early Miocene of Uganda. *Journal of Human Evolution*, **50**, 568-586.

- Rossie, J. B., Gilbert, G. C. and Hill, A., in press. Early cercopithecid monkeys from the Tugen Hills, Kenya. *Proceedings of the National Academy of Sciences, USA*.
- Seiffert, E. R., Simons, E. L. and Attia, Y., 2003. Fossil evidence for an ancient divergence of lorises and galagos. *Nature*, **422**, 421-424.
- Seiffert, E. R., Simons, E. L. and Simons, C. V. M., 2004. Phylogenetic, biogeographic, and adaptive implications of new fossil evidence bearing on crown anthropoid origins and early stem catarrhine evolution. *In* Ross, C. F. and Kay, R. F. (eds.) Anthropoid Origins: New Visions. Kluwer Academic, New York, p157-181.
- Seiffert, E. R., Simons, E. L., Clyde, W. C., Rossie, J. B., Attia, Y., Bown, T. M., Chatrath, P. and Mathison, M. E., 2005. Basal anthropoids from Egypt and the antiquity of Africa's higher primate radiation. *Science*, **310**, 300-304.
- Seiffert, E. R., Simons, E. L., Ryan, T. M. and Attia, Y., 2005. Additional remains of *Wadilemur elegans*, a primitive stem galagid from the late Eocene of Egypt. *Proceedings of the National Academy of Sciences, USA*, **102**, 11396-11401.
- Seiffert, E. R., Perry, J. M. G., Simons, E. L. and Boyer, D. M., 2009. Convergent evolution of anthropoid-like adaptations in Eocene adaptform primates. *Nature*, **461**, 1118-1122.
- Seiffert, E. R., Simons, S. L., Boyer, D. M., Perry, J. M. G., Ryan, T. M. and Sallam, H. M., 2010. A fossil primate of uncertain affinities from the earliest Late Eocene of Egypt. *Proceedings of the National Academy of Sciences, USA*, **107**, 9712-9717.
- Seiffert, E. R., Boyer, D. M., Fleagle, J. G., Gunnell, G. F., Heesy, C. P., Perry, J. M. G. and Sallam, H. M., 2018. New adaptform primate fossils from the late Eocene of Egypt. *Historical Biology*, **30**, 204-226.
- Seiffert, E. R., Tejedor, M. F., Fleagle, J. G., Novo, N. M., Cornejo, F. M., Bond, M., de Vries, D. and Campbell, K. E., 2020. A parapithecid stem anthropoid of African origin in the Paleogene of South America. *Science*, **368**, 194-197.
- Silcox, M. T., 2008. The biogeographic origins of primates and euprimates: East, West, North, or South of Eden?. *In* Sargis, E. J. and Dagosto, M. (eds.) Mammalian Evolutionary Morphology. Springer Netherlands, Dordrecht, p199-231.
- Silcox, M. T., Krause, D. W., Maas, M. C. and Fox, R. C., 2001. New specimens of *Elphidotarsius russelli* (Mammalia, ?Primates, Carpolestidae)

- and a revision of plesiadapoid relationships. *Journal of Vertebrate Paleontology*, **21**, 132-152.
- Silcox, M. T., Bloch, J. I., Boyer, D. M. and Houde, P., 2010. Cranial anatomy of Paleocene and Eocene *Labidolemur kayi* (Mammalia: Apatotheria), and the relationships of the Apatemyidae to other mammals. *Zoological Journal of the Linnean Society*, **160**, 773-825.
- Singleton, M., 2000. The phylogenetic affinities of *Otavipithecus* namibiensis. *Journal of Human Evolution*, **38**, 537-573.
- Springer, M. S., Meredith, R. W., Gatesy, J., Emerling, C. A., Park, J., Rabosky, D. L., Stadler, T., Steiner, C., Ryder, O. A., Janecka, J. E., Fisher, C. A. and Murphy, W. J., 2012. Macroevolutionary dynamics and historical biogeography of primate diversification inferred from a species supermatrix. *PLoS One*, **7**, e49521.
- Stanger-Hall, K. F., 1997. Phylogenetic affinities among the extant Malagasy lemurs (Lemuriformes) based on morphology and behavior. *Journal of Mammalian Evolution*, **4**, 163-194.
- Stevens, N. J., Seiffert, E. R., O'Connor, P. M., Roberts, E. M., Schmitz, M. D., Krause, C., Gorscak, E., Ngasala, S., Hieronymus, T. L. and Temu, J., 2013. Palaeontological evidence for an Oligocene divergence between Old World monkeys and apes. *Nature*, **497**, 611-614.
- Strait, D. S. and Grine, F. E., 2004. Inferring hominoid and early hominid phylogeny using craniodental characters: the role of fossil taxa. *Journal of Human Evolution*, **47**, 399-452.
- Strait, D. S., Grine, F. E. and Moniz, M. A., 1997. A reappraisal of early hominid phylogeny. *Journal of Human Evolution*, **32**, 17-82.
- Tornow, M. A., 2008. Systematic analysis of the Eocene primate family Omomyidae using gnathic and postcranial data. *Bulletin of the Peabody Museum of Natural History*, **49**, 43-129.
- Ward, C. V., 1997. Functional anatomy and phyletic implications of the hominoid trunk and hindlimb. *In* Begun, D. R., Ward, C. V. and Rose, M. D. (eds.) Function, Phylogeny, and Fossils: Miocene Hominoid Evolution and Adaptations. Springer Science, New York, p101-130.
- Welker, F., Ramos-Madrigal, J., Kuhlwilm, M., Liao, W., Gutenbrunner, P., de Manuel, M., Samodova, D., Mackie, M., Allentoft, M. E., Bacon, A.-M., Collins, M. J., Cox, J., Lalueza-Fox, C., Olsen, J. V., Demeter, F., Wang, W., Marques-Bonet, T. and Cappellini, E., 2019. Enamel proteome shows that *Gigantopithecus* was an early diverging pongine. *Nature*, **576**, 262-265.
- Williams, B. A. and Covert, H. H., 1994. New Early Eocene anaptomorphine primate (Omomyidae) from the Washakie Basin, Wyoming, with comments

on the phylogeny and paleobiology of anaptomorphines. *American Journal of Physical Anthropology*, **93**, 323-340.

Yoder, A. D., 1994. Relative position of the Cheirogaleidae in strepsirhine phylogeny: a comparison of morphological and molecular methods and results. *American Journal of Physical Anthropology*, **94**, 25-46.

Zalmout, I. S., Sanders, W. J., MacLatchy, L. M., Gunnell, G. F., Al-Mufarreh, Y. A., Ali, M. A., Nasser, A.-A. H., Al-Masari, A. M., Al-Sobhi, S. A., Nadhra, A. O., Matari, A. H., Wilson, J. A. and Gingerich, P. D., 2010. New Oligocene primate from Saudi Arabia and the divergence of apes and Old World monkeys. *Nature*, **466**, 360-364.