

Beth Shapiro

Department of Ecology and Evolutionary Biology
University of California Santa Cruz
Office: 144 Biomedical Sciences
Mailstop: EE Biology / EMS
Santa Cruz, CA 95064 USA
beth.shapiro@gmail.com

<http://pgl.soe.ucsc.edu>

Curriculum Vitae

Born: 14 Jan 1976
Citizenship: USA

Tel: +1 (831) 459-3003

Education:

DPhil (Zoology) Oxford University, 2003.
MS (Ecology) University of Georgia, 1999.
BS (Ecology) University of Georgia, 1999.

Current Position:

Associate Professor, Ecology and Evolutionary Biology, UC Santa Cruz, (2012- present)
Director of Evolutionary Genomics, UCSC Genomics Institute, UC Santa Cruz (2015-present)

Past Positions:

Shaffer Associate Professor, Department of Biology, The Pennsylvania State University (2011-2012)
Shaffer Assistant Professor, Department of Biology, The Pennsylvania State University (2007- 2011)
Director, Henry Wellcome Ancient Biomolecules Centre, Oxford University (2004-2007)
Royal Society University Research Fellow, Oxford University (2006-2007)
Wellcome Trust Research Fellow, Oxford University (2004-2006)

Selected Honors and Awards:

Packard Fellow, 2010
PopTech Science and Public Leadership Fellow, 2010
National Geographic Emerging Explorer, 2010
MacArthur Fellow, 2009
Searle Scholar, 2009
Visiting Fellow, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, 2007
Smithsonian Young Innovator, 2007
University Research Fellow, The Royal Society, 2006
Research Fellow, Balliol College, University of Oxford, 2002-2007
Rhodes Scholar, 1999

Scientific Service:

American Genetics Association, Council (2015-present)
Associate Editor, *Molecular Biology and Evolution*; <http://mbe.oxfordjournals.org/> (2007- current).
Editorial Board, *STAR: Science and Technology of Archaeological Research*; <http://www.maneyonline.com/loi/sta> (2014-present)
Editorial Board, *PaleoAmerica*; <http://www.maneyonline.com/loi/pal> (2014-present).
Executive Committee Member and 2015 Conference organizer: *Genome10K*. <https://genome10k.soe.ucsc.edu/> (2013-present)
Member: Public Interfaces of the Life Sciences Roundtable, The National Academies (2013-2015)
Panelist: *Public Interfaces of Science*, The National Academies. (2010).

Panelist: *Molecular Evolution and Genomics* funding panel, Genes and Genome Systems Cluster, Division of Molecular and Cellular Biosciences, The National Science Foundation. 2012
US Co-Chair: *Indonesian-American Kavli Frontiers of Science, The National Academy of Science* (2010).
US Session Chair: *German-American Kavli Frontiers of Science, The National Academy of Science* (2009).
Reviewer for >30 peer-review journals including *Science, Nature, PLoS Biology, Current Biology, PNAS, Proc Roy Soc B, Biology Letters, Molecular Ecology*.
Public Understanding of Science: I am and have been involved with several organizations to promote the public understanding of science. More information and upcoming events can be found on my website and in the "Seminars" section of this document.

Research Interests:

Molecular evolution; Genome evolution; Viral evolution; The interface of genomics and climate change; Ancient DNA; Paleontology; Human evolution, Extinction and speciation; Reconstructing demographic changes through time.

Publication List

Journal articles:

- (1) Mann DH, Groves P, Reanier RE, Gaglioti BV, Kunz ML, Shapiro B. 2015. Boom and bust on the mammoth steppe: life and extinction of megafauna in the ice-age Arctic. *Proc. Natl. Acad. Sci. USA* 112: 14301-14306.
- (2) Shapiro B. 2015. Mammoth 2.0: Will genome engineering resurrect extinct species? *Genome Biology* 16:228.
- (3) Krilinova IV, Zamina OG, Chernova OF, Lapteva EG, Trofimova SS, Lebedev VS, Tiunov AV, Soares AER, Shidlovskiy FK, Shapiro B. 2015. An ancient bison from the mouth of the Rauchua River, Chukotka, Russia. *Quaternary Research* 84: 232-245.
- (4) Koepfli K-P, Pollinger J, Godinho R, Robinson J, Lea A, Hendricks S, Schweitzer RM, Thalmann O, Silva P, Fan Z, Yurchenko AA, Dobrynin P, Makunin A, Cahill JA, Shapiro B, Álvares F, Brito JC, Geffen E, Leonard JA, Helgen KM, Johnson WE, O'Brien SJ, Van Valkenburgh B, Wayne RK. 2015. Genome-wide evidence reveals that African and Eurasian Golden Jackals are distinct species. *Current Biology* 17: 2158-2165.
- (5) Heintzman PD, Zazula GD, Cahill JA, MacPhee RDE, Shapiro B. 2015. Genomic data from extinct North American *Camelops* revises camel evolutionary history. *Molecular Biology and Evolution* 32: 2433-2440.
- (6) Seguin-Orlando A, Gamba C, DerSarkissian C, Ermini L, Louvel G, Boulygina E, Sokolov A, Nédoluzhko A, Lorenzen E, Lopez P, McDonald HG, Scott E, Tikhonov A, Stafford TW Jr, Shapiro B, Willerslev E, Prokhortchouk E, Orlando L. 2015. Pros and cons of methylation-based enrichment methods for ancient DNA. *Scientific Reports* 5: 11826.
- (7) Wooller M, Gaglioti B, Fulton TL, Shapiro B. 2015. Post-glacial dispersal of northern pike (*Esox cf. lucius*) in Eastern Beringia inferred using radiocarbon and ancient-DNA results from an 8,800 year old fish skull preserved in Quartz Lake, interior Alaska. *Quaternary Science Reviews* 120: 118-125.
- (8) Seguin-Orlando A, Hoover C, Vasiliev S, Ovodov ND, Shapiro B, Cooper A, Rubin E, Willerslev E, Orlando L. 2015. Amplification bias in TruSeq DNA libraries uncovers ancient methylation signatures. *Science and Technology of Archaeological Research* 1: 112054892315Y. 0000000005.
- (9) Cahill JA, Green RE, Kistler L, Salamzade R, Ersmark E, Fulton TL, Stiller M, Shapiro B. 2015. Genomic evidence of geographically widespread effect of gene flow from polar bears into brown bears. *Molecular Ecology* 24: 1205-1217.
- (10) Alter SE, Meyer M, Post K, Czechowski P, Gravlund P, Gaines C, Rosenbaum HC, Turvey ST van

- der Plicht H, Shapiro B, Hofreiter M. 2015. Climate impacts on trans-ocean dispersal and habitat in gray whales from the Pleistocene to the year 2100. *Molecular Ecology* 24: 1510-1522.
- (11) Koepfli KP- Paten B, The Genome 10K Community of Scientists*, O'Brien SJ. 2015. The Genome 10K Project: A way forward. *Annual Review of Animal Biosciences* 3: 57-111.
 - (12) Shapiro B, Graham RD, Letts B. 2015. A revised evolutionary history of armadillos (*Dasypus*) in North America based on ancient DNA. *Boreas* 44:14-23.
 - (13) Molak M, Suchard MA, Ho SYW, Beilman D, Shapiro B. 2015. Empirical calibrated radiocarbon sampler: a tool for incorporating radiocarbon-date and calibration error into Bayesian phylogenetic analyses of ancient DNA. *Molecular Ecology Resources* 15: 81-86
 - (14) Schubert M*, Jónsson H*, Chang D*, Der Sarkissian C, Emini Km Ginolhac A, Albrechtsen A, Dupanloup Im Foucal A, Petersen B, Raghavan M, Seguin-Orlando A, Korneliusen TF, Velasquez AMV, Stenderup J, Hoover CA, Rubin CJ, Alfarhan AM, Alquaraishi SA, Al-Rasheid KAS, MacHugh DE, Kalbfleish T, MacLeod JN, Rubin EM, Sicheritz-Ponten T, Andersson L, Hofreiter M, Marques-Bonet T, Gilbert MTP, Nielsen R, Excoffier L, Willerslev E, Shapiro B, Orlando L. 2014. Prehistoric horse genomes reveal the genetic foundation and cost of domestication. *Proc Natl Acad Sci USA* 111: E5661-E5669.
 - (15) Jarvis ED, Mirarab S, and the Avian Phylogenomics Consortium [103 additional authors]. 2014. Whole genome analyses resolve early branches in the tree of life of modern birds. *Science* 346: 1320-1331.
 - (16) Ng TFF, Zhou Y, Chen L-F, Shapiro B, Stiller M, Heintzman PD, Varsani A, Kondov NO, Wong W, Deng X, Andrews TD, Moorman BJ, Meulendyk R, MacJay G, Gilbertson RL, Delwart E. 2014. Preservation of viral genomes in 700-year-old caribou feces from a subarctic ice patch. *Proc Natl Acad Sci USA* 111:16842-16847.
 - (17) Kistler L, Montenegro A, Smith BD, Gifford JA, Green RE, Newsom LA, Shapiro B. 2014. Trans-oceanic drift and the domestication of African bottle gourds in the Americas. *Proc Natl Acad Sci USA*. 111:2937-2941.
 - (18) Shapiro B, Hofreiter M. 2014. A paleogenomic perspective on evolution and gene function: New insights from ancient DNA (invited review). *Science* 343: 1236573.
 - (19) Horn S, Prost S, Stiller M, Makowiecki D, Kusnetsova T, Benecke N, Pucher E, Hufthammer AK, Schouwenburg C, Shapiro B, Hofreiter M. 2014. Ancient mitochondrial DNA and the genetic history of Eurasian beavers *Castor fiber*. *Molecular Ecology* 23: 1717-1729.
 - (20) Der Sarkissian C, Emini L, Jónsson H, Alekseev A, Crubézy E, Shapiro B, Orlando L. 2014. Shotgun profiling of fossil remains. *Molecular Ecology* 23: 1780-1798.
 - (21) Barnett R, Yamaguchi N, Shapiro B, Ho, SYW, Barnes I, Burger J, Sabin R, Werdelin L, Cuisin J, Larson G. 2014. Revealing the maternal demographic history of *Panthera leo* using ancient DNA and a spatially explicit genealogical analysis. *BMC Evolutionary Biology* 14: 80.
 - (22) Harington CR, Cournoyer M, Chartier M, Fulton TL, Shapiro B. 2014. Brown bear (*Ursus arctos*) (9880±35 BP) from Late-glacial Champlain Sea deposits of Saint-Nicolas, Québec, Canada, and the dispersal history of bears. *Canadian Journal of Zoology* 51: 527-535.
 - (23) Shapiro B, Ho SYW. 2014. Ancient hyaenas highlight the old problem of estimating evolutionary rates (Invited perspective). *Molecular Ecology* 23:499-501.
 - (24) Thalmann O, Shapiro B, Schuenemann VJ, Sawyer SK, Greenfield DL, Germonpre MB, [23 others] Wayne RK. 2013. Complete mitochondrial genomes of ancient canids suggests a European origin of domestic dogs. *Science*. 342: 871-874.
 - (25) Orlando L, Finolhac A, Zhang G, Froese D, [49 authors], Shapiro B, Jun W, Willerslev E. 2013. Recalibrating *Equus* evolution using the genome sequence of an early Middle Pleistocene horse. *Nature* 499: 74-78.
 - (26) Green RE, Shapiro B. Human evolution: turning back the clock. 2013. *Current Biology* 23:R286-288.
 - (27) Fulton TL, Norris RW, Graham RE, Semken HA Jr, Shapiro B. 2013. Ancient DNA supports southern survival of Richardson's collared lemming (*Dicrostonyx richardsoni*) during the Last

- Glacial Maximum. *Molecular Ecology* 22:2540-2548.
- (28) Cahill JA, Green RE, Fulton TL, Stiller M, Jay F, Ovsyanikov N, Salamzade R, St John J, Stirling I, Slatkin M, Shapiro B. 2013. Genomic evidence for island population conversion resolves conflicting theories of polar bear evolution. *PLoS Genetics* 9: e1003345.
 - (29) Vilstrup JT, Sengouin-Orlando Am Stiller M, Ginolhac A, Raghavan M, Nielsen SCA, Weinstock J Friese D, Vasiliev SK, Ovodov ND, Clary J, Helgen KM, Fleischer RC, Cooper A, Shapiro B, Orlando L. 2013. Mitochondrial phylogenomics of modern and ancient equids. *PLoS ONE* 8: e55950.
 - (30) Gill MS, Lemey P, Faria NR, Rambaut A, Shapiro B, Suchard M. 2013. Improving Bayesian population dynamics inference: a coalescent-based model for multiple loci. *Molecular Biology and Evolution* 30: 713-724.
 - (31) Molak M, Lorenzen ED, Shapiro B, Ho SYW. 2013. Phylogenetic estimation of timescales using ancient DNA: the effects of temporal sampling scheme and uncertainty in sample ages. *Molecular Biology and Evolution* 30: 253-262.
 - (32) Ginolhac A, Vilstrup J, Stenderup J, Rasmussen M, Stiller M, Shapiro B, Zazula G, Froese D, Steinmann KE, Thompson JD, Al-Rasheid KAS, Gilbert MTP, Willerslev E, Orlando L. 2012. Improving the performance of true single-molecule sequencing for ancient DNA. *BMC Genomics* 13:177.
 - (33) Fischer A, Shapiro B, Muriuki C, Heller M, Schnee C, Bongcam-Rudloff E, Frey J, Jores J. 2012. The origin of the '*Mycoplasma mycoides* cluster' coincides with domestication of ruminants. *PLoS ONE* 7:e36150.
 - (34) Widga C, Fulton TL, Martin LD, Shapiro B. 2012. *Homotherium* and *Cervalces* from the Great Lakes region, USA: geochronology, morphology and ancient DNA. *Boreas* 41: 546-556.
 - (35) Dalén L, Orlando L, Shapiro B, Durling MB, Quam R, Gilbert MTP, Fernández-Lomana JCD, Willerslev E, Arsuaga JL, Götherström 2012. A. Partial genetic turnover in Neandertal: continuity in the east and population replacement in the west. *Molecular Biology and Evolution* 29: 1893-1897.
 - (36) Letts B, Shapiro B. 2012. Case study: ancient DNA recovered from Pleistocene-age remains of a Florida armadillo. *Methods in Molecular Biology* 840: 87-92.
 - (37) Fulton TL, Wagner SM, Shapiro B. 2012. Case study: recovery of ancient nuclear DNA from toe pads of the extinct passenger pigeon. *Methods in Molecular Biology* 840: 29-35.
 - (38) MacDonald GM, Beilman DW, Kuzmin YV, Orlova LA, Kremenetski KV, Shapiro B, Wayne RK, Van Valkenburgh B. 2012. Pattern of extinction of the woolly mammoth in Beringia. *Nature Communications* 3: 893.
 - (39) Letts B, Fulton TL, Stiller M, Andrews T, MacKay G, Popkp R, Shapiro B. 2012. Ancient DNA reveals genetic continuity in woodland caribou of the Central Mackenzie Mountains, Northwest Territories, Canada. *Arctic* 65, Suppl 1: 80-94.
 - (40) Fulton TL, Wagner SM (PSU undergrad), Fisher C, Shapiro B. 2012. Nuclear DNA from the extinct passenger pigeon (*Ectopistes migratorius*) confirms its phylogenetic placement within the Columbinae. *Annals of Anatomy* 194: 52-57.
 - (41) Fulton T, Letts B, Shapiro B. 2012. Multiple losses of flight and recent speciation in steamer ducks. *Proceedings of the Royal Society B* 279: 2339-2346.
 - (42) Higham T, Compton T, Stringer C, Jacobi R, Shapiro B, Trinkaus E, Chandler B, Gröning F, Collins C, Hillson S, O'Higgins P, Fagan M. 2011. The earliest evidence for anatomically modern humans in northwestern Europe. *Nature* 479: 521-524.
 - (43) Orlando L, Ginolhac A, Raghavan M, Vilstrup J, Rasmussen M, Magnussen K, Steinmann K, Kapranov P, Thompson JF, Shapiro B, Zazula G, Froese D, Hofreiter M, Al-Rasheid KAS, Mundy J, Gilbert MTP, Willerslev E. 2011. Single-molecule ancient DNA sequencing of a Pleistocene horse bone. *Genome Research* 21: 1705-1719.
 - (44) Lorenzen ED, Nogues-Bravo D, Orlando L, Weinstock J, Binladen J, Marske KA, 52 additional authors, Shapiro B, Rahbek C, Willerslev E. 2011. Species-specific responses of Late Quaternary megafauna to climate and humans. *Nature* 479: 359-364.

- (45) Edwards CJE, Suchard MA, Lemey P, Welch JJ, Barnes I, Fulton TL, Barnett R, O'Connell TC, Coxon P, Monaghan N, Valdiosera C, Lorenzen ED, Willerslev E, Baryshnikov GF, Rambaut A, Thomas MG, Bradley DG, Shapiro B. 2011. Ancient hybridization and a recent Irish origin for the modern polar bear matriline. *Current Biology* 21: 1-8.
- (46) Kistler L, Shapiro B. 2011. Ancient DNA confirms a local origin of domesticated chenopod in Eastern North America. *J. Arch. Sci.* 38: 3459-3554.
- (47) Lippold S, Knapp M, Kuznetsova T, Leonard JA, Benecke N, Ludwig A, Rasmussen M, Weinstock J, Willerslev E, Shapiro B, Hofreiter M. 2011. Discovery of lost diversity of paternal horse lineages using ancient DNA. *Nature Comm.* 2:450.
- (48) Workman C, Dalen L, Vartanyan S, Shapiro B, Kosintev P, Sher A, Gotherstrom A, Barnes I. 2011. Population-level genotyping of coat colour polymorphism in woolly mammoth (*Mammuthus primigenius*). *Quat. Sci. Rev.* 30: 2304-2308.
- (49) Ho SYW, Lanfear R, Phillips MJ, Barnes I, Thomas JA, Kolokotronis S-O, Shapiro B. 2011. Bayesian estimation of substitution rates from ancient DNA sequences with low information content. *Syst. Biol.* 60: 366-375.
- (50) Ho SYW, Shapiro B. 2011. Skyline-plot methods for estimating demographic history from nucleotide sequences *Mol. Ecol. Res.* 11: 423-434.
- (51) Harrison GL, Lemey P, Hurles M, Moyes C, Horn S, Pryor J, Malani J, Supuri M, Masta A, Teriboriki B, Toatu T, Penny D, Rambaut A, Shapiro B. 2011. Genomic analysis of Hepatitis B Virus reveals antigen state and genotype as source of evolutionary rate variation. *Viruses* 3: 83-101.
- (52) Shapiro B, Ho SYW, Drummond AJ, Suchard MA, Pybus O, Rambaut A. 2011. A Bayesian phylogenetic method to estimate unknown sequence ages. *Mol. Biol. Evol.* 28: 879-887.
- (53) Firth C, Kitchen A, Shapiro B, Suchard MA, Holmes EC, Rambaut A. 2010. Using time-structured data to estimate evolutionary rates of double-stranded DNA viruses. *Mol. Biol. Evol.* 27: 2038-2051.
- (54) Shapiro B, Hofreiter M. 2010. The analysis of ancient human genomes: using next generation sequencing, 20-fold coverage of the genome of a 4,000-year-old human from Greenland has been obtained. *Bioessays* 32: 388-391.
- (55) Stack JC, Welch D, Ferrari MJ, Shapiro B, Grenfell BT. 2010. Protocols for sampling viral sequences to study epidemic dynamics. *J. Roy. Soc. Interface* 7: 1119-1127.
- (56) Campos P, Willerslev E, Sher A, Axelsson E, Tikhonov A, Aaris-Sørensen K, Greenwood A, Kahlke R-D, Kosintsev P, Krakhmalnaya T, Kuznetsova T, Lemey P, MacPhee RD, Norris CA, Shepherd K, Suchard MA, Zazula GD, Shapiro B, Gilbert MTP. 2010. Ancient DNA analysis excludes humans as the driving force behind late Pleistocene musk ox (*Ovibos moschatus*) population dynamics. *Proc. Natl. Acad. Sci. USA* 107: 5675-5680.
- (57) Kuhn TS, McFarlane K, Groves P, Moers AO, Shapiro B. 2010. Modern and ancient DNA reveal recent partial replacement of caribou in the southwest Yukon. *Mol. Ecol.* 19: 1312-1318.
- (58) Haile J, Larson G, Owens K, Dobney K, Shapiro B. 2010. Ancient DNA typing of Archaeological Pig Remains Corroborates Historical Records. *J. Arch. Sci.* 37:174-177.
- (59) Edwards CJ, Magee DA, Park SD, McGettigan PA, Lohan AJ, Murphy A, Finlay EK, Shapiro B, Chamberlain AT, Richards MB, Bradley DG, Loftus BJ, Machugh DE. 2010. A complete mitochondrial genome sequence from a mesolithic wild aurochs (*Bos primigenius*). *PLoS One* 5:e9255.
- (60) Magiorkinis G, Magiorkinis E, Paraskevis D, Ho SYW, Shapiro B, Pybus O, Allain JP, Hatzakis A. 2009. The global spread of Hepatitis C Virus 1a and 1b: a phylodynamic and phylogeographic analysis *PLoS Med.* 6:e1000198.
- (61) Cordingly JE, Sundareshan SR, Larison BJ, Shapiro B, Rubenstein DI. 2009. Grevy's zebra conservation: overcoming threats of isolation, genetic hybridization and demographic instability. *Anim. Conserv.* 12 520-521.
- (62) Bunce M, Worthy T, Phillips M, Holdaway R, Willerslev E, Haile J, Shapiro B, Scofield P, Drummond A, Kamp P, Cooper A. 2009. The evolutionary history of the extinct ratite moa and

- New Zealand Neogene paleogeography. *Proc. Natl. Acad. Sci. USA* 106: 20646-20651.
- (63) Ramsden C, Charleston MA, Duffy S, Shapiro B, Holmes EC. 2009. Insights into the evolutionary history of an emerging livestock pathogen: Porcine Circovirus 2. *J. Virol.* 83: 12813-12821.
- (64) Cordingly JE, Sundarisan SR, Fischhoff IR, Shapiro B, Ruskey J, Rubenstein DI. 2009. Is the endangered Grevy's zebra threatened by hybridization? *Anim. Conserv.* 12: 505-513.
- (65) Zazula GD, MacKay G, Andrews TD, Shapiro B, Letts B, Brock F. 2009. A Late Pleistocene steppe bison (*Bison priscus*) partial carcass from Tsiigehtchic, Northwest Territories, Canada. *Quat. Sci. Rev.* 28: 2734-2742.
- (66) Collins MJ, Penkman KEH, Rohalnd N, Shapiro B, Dobberstein RC, Rotz-Timme A, Hofretier M. 2009. Is amino acid racemization a useful tool for screening for ancient DNA in bone? *Proc. Roy. Soc. B* 276: 2971-2977.
- (67) Weinstock J, Shapiro B, Prieto A, Martin JC, Gonzáles BA, Gilbert MPT, Willerslev E. 2009. The Late Pleistocene distribution of vicuñas (*Vicugna vicugna*) and the "extinction" of the gracile llama (*Lama gracilis*): new molecular data. *Quat. Sci. Rev.* 28: 15-16.
- (68) Barnett R, Shapiro B, Ho SYW, Barnes I, Burger J, Yamaguchi N, Higham T, Wheeler, HT, Rosendhal W, Sher AV, Baryshnikov G, Cooper A. 2009. Phylogeography of lions (*Panthera leo*) reveals three distinct taxa and a Late Pleistocene reduction in genetic diversity. *Mol. Ecol.* 18: 1668-1677.
- (69) Rambaut A, Drummond AJ, Ho SYW Shapiro B. 2009. Accommodating the effect of ancient DNA damage on inferences of demographic histories. *Mol. Biol. Evol.* 26: 245-248.
- (70) Rijdsdijk KF, Hume JP, Bunnik F, Florens V, Baider C, Shapiro B, et al. 2009. Mid-Holocene vertebrate bone Concentration Lagerstätte on oceanic island Mauritius provides a window into the ecosystem of the dodo (*Raphus cucullatus*). *Quat. Sci. Rev.* 28: 14-24.
- (71) Wilson M, Shapiro B, Hills LV. 2008. Late Pleistocene northward-dispersing *Bison antiquus* from the Bighill Creek Formation, Gallelli Gravel Pit, Alberta, Canada, and the fate of *Bison occidentalis*. *Can. J. Earth Sci.* 45: 827-859.
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- (73) Shapiro B. 2008. Engineered polymerases amplify the potential of ancient DNA. *Trends Biotech.* 26: 285-287.
- (74) Ho SYW, Larson G, Edwards CJ, Heupink TH, Lain KE, Holland PWH, Shapiro B. 2008. Correlating Bayesian date estimates with climatic events and domestication using a bovine case study. *Biol. Lett.* 274: 1377-1385.
- (75) Ho SYW, Saarma U, Barnett R, Haile J, Shapiro B. T 2008. The effect of inappropriate calibration in molecular ecological studies: three case studies *PLoS ONE* 3: e1615.
- (76) Barnett R, Yamaguchi N, Shapiro B, Sabin R. 2008. Ancient DNA analysis indicates the first English lions originated from North Africa, *Contrib. Zool.* 77: 7-16.
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- (78) Buckley M, Walker A, Ho SYW, Yang Y, Smith C, Ashton P, Oates JT, Cappellini E, Koonn H, Penkman K, Elsworth B, Ashford D, Solazzo C., Andrews P, Strahler J, Shapiro B, Ostrom P, Gandhi H, Miller W, Raney B, Zylber MI, Gilbert MTP, Prigodich RV, Ryan M, Rijdsdijk KF, Janoo A, Collins M. 2008. Comment on "Protein sequences from Mastodon and *Tyrannosaurus rex* revealed by mass spectrometry" *Science* 319: 33.
- (79) Barnett R, Yamaguchi N, Shapiro B, Nijman V. 2007. Using ancient DNA techniques to identify the origin of an unprovenanced museum specimen, as illustrated by the identification of a 19th century lion from Amsterdam, *Contrib. Zool.* 76: 87-94.
- (80) Deforche K, Camacho, R., Laethem, KV, Shapiro B., Moreau Y, Rambaut A, Vandamme, AM, Lemey P. 2007. Estimating the relative contribution of dNTP pool imbalance and APOBEC3G/3F editing to HIV evolution in vivo. *J. Comp. Biol.* 14: 1105-1114.
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- Vandamme A-M. 2007. Recombination is confounding the early evolutionary history of HIV-1: subtype G is a recombinant. *J. Virol.* 81: 8543-51.
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- (83) Barnes I, Shapiro B, Kuznetsova T, Sher A, Guthrie D, Lister A, Thomas MG. 2007. Genetic structure and extinction of the woolly mammoth. *Curr. Biol.* 17: 1072-1075.
- (84) Ho SYW, Heupink TH, Rambaut A, Shapiro B. 2007. Bayesian estimation of sequence damage in ancient DNA. *Mol. Biol. Evol.* 24:1416-1422.
- (85) Edwards CJ, Bollongino R, Scheu A, Chamberlain A, Tresset A, Vigne J-D, Baird JF, Larson G, Ho SYW, Heupink TH, Shapiro B, Freeman AR, *et al.* 2007. Mitochondrial DNA analysis shows a Near Eastern Neolithic origin for domestic cattle and no indication of domestication of European aurochs. *Proc. Roy. Soc B.* 274: 1377-1385.
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- (90) Shapiro B, Rambaut A, Drummond AJ. 2006. Choosing appropriate substitution models for the phylogenetic analysis of protein-coding sequences *Mol. Biol. Evol.* 23: 7-9.
- (91) Poinar HN, Schwartz C, Qi J, Shapiro B, MacPhee RD, Buiges B, Tikhonov A, Huson D, Tonsho L, Auch A, Rapp M, Miller W, Schuster SC. 2006. Metagenomics to paleo-genomics: large scale sequencing of mammoth DNA. *Science* 311: 392-394.
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- (95) Bunce M, Szulkin M, Lerner HRL, Barnes I, Shapiro B, Cooper A, Holdaway RN. 2005. Ancient DNA provides new insights into the evolutionary history of New Zealand's extinct giant eagle. *PLoS Biol.* 3(1) e20.
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Videos and interviews available online:

A short video take on what I do:

http://poptech.org/popcasts/quick_takes_beth_shapiro

And how I “live curious”:

<http://video.nationalgeographic.com/video/specials/in-the-field-specials/curiosity-beth-shapiro/>

Longer talks/seminars

TEDxDeExtinction:

Ancient DNA: What it is, and what it could be
National Geographic Society, Washington D.C.

<http://longnow.org/revive/tedxdeextinction/ancient-dna-what-it-is-and-what-it-could-be/>

Pop!Tech:

Understanding Extinction

Swedish Embassy, Washington D.C

http://poptech.org/popcasts/beth_shapiro_species_extinction

Pop!Tech:

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Pop!Tech annual meeting

http://poptech.org/popcasts/beth_shapiro_what_goes_extinct

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