

Faysal Bibi

Post-Doctoral Fellow
Leibniz Institute for Research on Evolution and Biodiversity
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Appointments:

- 2013-2014: Gerstner Scholar, American Museum of Natural History, New York, USA.
- 2011-2012: DAAD-Leibniz Postdoctoral Fellow, Museum für Naturkunde, Berlin, Germany.
- 2009 – 2011 NSF International Research Fellow, Institut de Paléoprimatologie et Paléontologie humaine: Evolution et Paléoenvironnements (iPHEP), CNRS UMR 6046, Université de Poitiers, France.

Professional Preparation

Ph.D.	Yale University	Geology & Geophysics	2009
M.Phil.	Yale University	Geology & Geophysics	2006
B.A.	University of California, Berkeley	Anthropology	2001

PhD Advisor

Elisabeth Vrba, Department of Geology & Geophysics, Yale University.

Title: Evolution, Systematics, and Paleocology of Bovinae (Mammalia: Artiodactyla) from the Late Miocene to the Recent.

Postdoctoral Sponsors

2009-2011 Jean-Renaud Boisserie & Patrick Vignaud, iPHEP, Université de Poitiers

2011-2012 Wolfgang Kiessling, Museum für Naturkunde, Berlin

Research Focus

I am interested in patterns and processes governing **mammalian evolution**. I work primarily on records of fossil vertebrates from **Africa** and **Eurasia** of the last 20 million years. I track links between evolutionary changes (speciation, extinction, novel morphological adaptations, biogeographic and paleoecological shifts) and changes in the physical environment (global and local climatic and geological events).

I am a **specialist** on the fossil record and evolution of **Bovidae** (antelopes and relatives). I work mainly on collections from East Africa, the Mediterranean, and southern Asia. I employ methods of phylogenetic systematics, biogeographic and paleoecological analyses.

I am **co-director** of paleontological project annually recovering and studying fossils from the ca. 7Ma Baynunah Formation, Western Region of Abu Dhabi Emirate.

Science Careers (2009) coverage: [dx.doi.org/10.1126/science.caredit.a0900155](https://doi.org/10.1126/science.caredit.a0900155)

Publications

In Press. **Bibi, F.**, A. Hill, M. Beech, W. Yasin. Late Miocene fossils from the Baynunah Formation, United Arab Emirates: Summary of a decade of new work. *Neogene Terrestrial Mammalian Biostratigraphy and Chronology in Asia* (eds. L. Flynn, X. Wang, M. Fortelius). Columbia University Press.

In Press. **Bibi, F.** and E.S. Vrba. *Bovidae; Bovinae; Antilopinae; Bovicornia*; four entries in K. de Queiroz, J. Gauthier, P. Cantino (eds.), *Phylonyms: A Companion to the Phylocode*. University of California Press.

2012 **Bibi, F.**, B. Kraatz, N. Craig, M. Beech, M. Schuster, and A. Hill. Early evidence for complex social structure in Proboscidea from a late Miocene trackway site in the United Arab Emirates. *Biology Letters*, 8:670-673.

2012 **Bibi, F.**, E. Vrba, F. Fack. A new African fossil caprin and a combined molecular and morphological Bayesian analysis of Caprini (Mammalia: Bovidae). *Journal of Evolutionary Biology*, 25:1843-1854.

2012 Hill, A., **F. Bibi**, M. Beech, W. Yasin al-Tikriti. Before archaeology: Life and environments in the Miocene of Abu Dhabi. In: Potts, D. and Hellyer, P. (eds.), *Fifty Years of Emirates Archaeology*. pp. 20-33. Ministry of Culture, Youth and Community Development, Abu Dhabi, UAE.

2011 **F. Bibi**. *Tragelaphus nakuae*: Evolutionary change, biochronology, and turnover in the African Plio-Pleistocene. *Zoological Journal of the Linnean Society*, 162: 699-711.

2011 **F. Bibi**. Mio-Pliocene Faunal Exchanges and African Biogeography: The Record of Fossil Bovids. PLOS ONE. 6(2): e16688 (10pp.). doi:10.1371/journal.pone.0016688

2010. Reed, K. and **F. Bibi**. Fossil Tragelaphini (Artiodactyla: Bovidae) from Hadar, Ethiopia. JOURNAL OF MAMMALIAN EVOLUTION. DOI 10.1007/s10914-010-9146-6

2010 **Bibi, F.** and E. S. Vrba. Unraveling Bovin Phylogeny: Accomplishments and Challenges. *BMC Biology*, 8:50 (4pp.) (Invited review article)

2009 **Bibi, F.**, M. Bukhsianidze, A.W. Gentry, D. Geraads, D.S. Kostopoulos, and E.S. Vrba. The fossil record and evolution of Bovidae: State of the field. *Palaeontologia Electronica*, 12: 10A, 11p.

2009 Patnaik, R., A. Sahni, D. Cameron, B. Pillans, P. Chatrath, E. Simons, M. Williams, and **F. Bibi**. Ostrich-like eggshells from a 10.1 million-yr-old Miocene ape locality, Haritalyangar, Himachal Pradesh, India. *Current Science*, 96: 1485-1495.

2009 Kraatz, B.P., D. Badamgarav, and **F. Bibi**. *Gomphos ellae*, a new mimotomid from the middle Eocene of Mongolia and its implications for the origin of Lagomorpha. *Journal of Vertebrate Paleontology* 29:576-583.

2009 Haile-Selassie, Y., E. Vrba, and **F. Bibi**. Bovidae. Chapter 9 in Y. Haile-Selassie and G. Wolde-Gabriel (eds.), *Ardipithecus kaddaba: Late Miocene Evidence from the Middle Awash, Ethiopia*. University of California Press. pp. 277-330

2008 Boisserie, J.-R., F. Guy, A. Delagnes, L. Hlusko, **F. Bibi**, Y. Beyene, C. Guillemot. New paleoanthropological research in the Plio-Pleistocene Omo Group, Lower Omo Valley, SNNPR, Ethiopia. *COMPTES RENDUS PALEVOL* 7:429-439.

2008 **Bibi, F.**, and E. Savas Güleç. 2008. Bovidae (Mammalia: Artiodactyla) from the late Miocene of Sivas, Turkey. *JOURNAL OF VERTEBRATE PALEONTOLOGY*, 28:501-519.

2007 **Bibi, F.** Dietary niche partitioning among fossil bovids in late Miocene C₃ habitats: Consilience of functional morphology and stable isotope analysis. 2007. *PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY*, 253: 529-538.

2007 **Bibi, F.** Origins, paleoecology, and paleobiogeography of early Bovini (Artiodactyla: Bovidae: Bovinae). 2007. *PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY*, 248:60-72.

2007 Barnosky, A.D., **F. Bibi**, S. S. B. Hopkins, and R. Nichols. Biostratigraphy and magnetostratigraphy of the mid-Miocene Railroad Canyon sequence, Montana and Idaho, and the age of the mid-Tertiary unconformity west of the Continental Divide. 2007. *JOURNAL OF VERTEBRATE PALEONTOLOGY*, 27:204-224.

2006 **Bibi, F.**, A.B. Shabel, B.P. Kraatz, and T.A. Stidham. New fossil ratite (Aves: Palaeognathae) eggshell discoveries from the Late Miocene Baynunah Formation of the United Arab Emirates, Arabian Peninsula. 2006. *PALAEONTOLOGIA ELECTRONICA*, 9: 2A, 13p.

2004 Shabel, A.B., A.D. Barnosky, T. von Leuvan-Smith, **F. Bibi**, & M. Kaplan. 2004. Irvingtonian mammals from the Badger Room, Porcupine Cave, South Park, Colorado: age, taphonomy, climate, and ecology. Ch. 22 in A.D. Barnosky (ed.), *Biodiversity Response to Climate Change in the Middle Pleistocene*, University of California Press, Berkeley.

Conference Presentations & Published Abstracts

2012 **Bibi, F.** Terrestrial African biogeography and paleoenvironments: Late Miocene to Recent. *Centenary Meeting of the Paläontologische Gesellschaft*, Berlin, Germany.

2012 **Bibi, F.**, B. Kraatz, N. Craig, M. Beech, M. Schuster, and A. Hill. Complex social structure in Proboscidea from a remarkable late Miocene trackway site in the United Arab Emirates. *72nd Annual Meeting of the Society of Vertebrate Paleontology*. *Journal of Vertebrate Paleontology* (S): 63-64

2011 **Bibi F.**, J.-R. Boisserie, T. White. Paleoenvironmental change in eastern Africa through the fossil record of Bovidae. *71st Annual Meeting of the Society of Vertebrate Paleontology*. *Journal of Vertebrate Paleontology* (S): 71.

2011 Schuster M., **F. Bibi**, M. Beech, B. Kraatz, N. Craig, A. Hill. Aperçu des systèmes sédimentaires continentaux du Néogène d'Abu Dhabi (Émirats Arabes Unis) : exemple des séries fossilifères à vertébrés du Miocène supérieur. *13^{ème} Congrès Français de Sédimentologie*, Dijon, Livre des résumés, Publ. ASF, Paris, n° 68, 306-307.

- 2010 **Bibi F.** Mio-Pliocene faunal exchanges between Eurasia and Africa: the record of rare bovid taxa. *70th Annual Meeting of the Society of Vertebrate Paleontology*. SVP 2010 Journal of Vertebrate Paleontology (S): 60A.
- 2009 **Bibi, F.** The fossil record and evolution of Tragelaphini (Bovidae, Artiodactyla). *69th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 29(S3): 63A.
- 2009 Kraatz, B.P., **F. Bibi**, A. Hill. New rodents from the late Miocene of the United Arab Emirates. *69th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 29 (S3): 129A.
- 2009 **Bibi, F.**, A. Hill, M. Beech, and W. Yasin. A Late Miocene Fauna from the United Arab Emirates. *Asian Mammal Biostratigraphy Conference*. Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China. [Invited]
- 2008 **Bibi, F.**, A. Hill, M. Beech, and W. Yasin. A river fauna from the Arabian Desert: late Miocene fossils from the United Arab Emirates. *68th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 28 (S3): 53A.
- 2008 Fox, M., **F. Bibi**, A. Hill. Jacketing the desert sands. *68th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 28 (S3): 80A.
- 2008 **Bibi, F.** New fossils of Bovidae from the Middle Awash, Ethiopia, and Sivas, Turkey. Evolution of Bovini. A cladistic phylogenetic analysis of Bovinae. Three presentations given at the RHOI Bovid Analytical Working Group conference, Addis Ababa, 4–8 August, 2008.
- 2007 **Bibi, F.** Dietary niche partitioning among fossil bovids in late Miocene C₃ habitats: Consilience of functional morphology and stable isotope analysis. *67th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 27(S3): 48-49.
- 2007 **Bibi, F.**, A. Hill, M. Beech, and W. Yasin. New fossil discoveries from the late Miocene (8–6Ma) of the United Arab Emirates. *1st Meeting of the East African Association of Paleoanthropology and Paleontology*, Nairobi, Kenya, 19 June 2007.
- 2006 **Bibi, F.** Origin, paleoecology, and paleobiogeography of early Bovini. *66th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 26(S3): 42.
- 2006 Haile-Selassie, Y., and **F. Bibi**. Bovinae (Artiodactyla, Bovidae) from Mio-Pliocene deposits of the middle Awash, Ethiopia. *66th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 26(S3): 71.
- 2006 Reiners, P.W., D. Peppe, **F. Bibi**, and S. Nicolescu. He Diffusion in and (U-Th)/He Dating of Fossil Tooth Enamel and Conodonts. *16th Annual V M Goldschmidt Conference*, Geochimica et Cosmochimica Acta 70 (18): A525-A525 Suppl. S Aug-Sep.
- 2005 **Bibi, F.**, A.B. Shabel, B.P. Kraatz, & T. Stidham. Fossil ratite eggshell discoveries from the Late Miocene of Arabia: ootaxonomy, biostratigraphy, and biogeography. *65th Annual Meeting of the Society of Vertebrate Paleontology*. Journal of Vertebrate Paleontology 25(S3): 37.

- 2004 **Bibi, F.**, A.B. Shabel, & B.P. Kraatz. New fossil discoveries from the Late Miocene of Arabia (Abu Dhabi, United Arab Emirates). *32nd International Geological Congress*, Florence, Italy. Abs. Vol., pt.1 abs. 77-4 p.377-378.
- 2002 Shabel, A.B., **F. Bibi**, A.D. Barnosky. The Badger Room fauna from Porcupine Cave, South Park, Colorado; structural similarity between middle Pleistocene and modern mammal communities. *62nd Annual Meeting of the Society of Vertebrate Paleontology*. *Journal of Vertebrate Paleontology* 22(S3): 106.
- 2002 **Bibi, F.** Dead rabbits do tell tales: Taphonomy of mid-Pleistocene leporids from the Badger Room, Porcupine Cave, South Park, Colorado. *California Paleontology Conference*. *Paleobios* 22(s1):1.

Field Experience and Project Team Affiliations

- 2002–present *Baynunah Paleontology Project*, Abu Dhabi Emirate, United Arab Emirates. **Co-director**. Leading paleontological expedition focused on the recovery and analysis of fossils from the late Miocene outcrops of the Western Region of Abu Dhabi Emirate. Co-PI: Andrew Hill (Yale University).
- 2002–present *Middle Awash Research Project*, Ethiopia. **Team member**. Paleontological field survey and collection work in the Middle Awash, Afar Region. Fossil preparation, imaging, and study at the National Museum of Ethiopia, Addis Ababa. PIs: Berhane Asfaw (Rift Valley Research Service, Ethiopia), Tim White (U.C., Berkeley), Giday WoldeGabriel (Los Alamos National Laboratories).
- 2007–present *Baringo Paleontological Research Project*, Kenya. **Team member**. Fieldwork and study of fossil Bovidae from late Miocene to Recent deposits of the Baringo Lake region, Kenya. PI: Andrew Hill (Yale University).
- 2007–present *Omo Group Research Expedition*, Ethiopia. **Team member**. Study of Pliocene Bovidae from the Omo region, southern Ethiopia. PI: Jean-Renaud Boisserie (CNRS, France).
- 2011 *Zahlan Cave Excavation Project*. **Team member**. Excavation and analysis of faunal remains from the Holocene-age Zahlan Cave in Dhonniyyeh, northern Lebanon. PI: Alia Fares (University of Cologne).
- 2008 *Revealing Hominid Origins Initiative Analytical Working Group on Bovidae*. **Conference organizer**. Organized conference with advisor E.S. Vrba that brought together six specialists on late Miocene Bovidae from around the world in Addis Ababa, Ethiopia, 4–8 August.
- 2006 *Late Miocene Bovidae of Turkey*. Study of new fossil specimens of Bovidae from Turkish Late Miocene sites of Sivas and Çorakyerler. PI: Erksin Savas Güleç (University of Ankara, Dept of Anthropology).
- 2004–2005 *Khaitchin-Ula (Gobi) and Tsagaan Nor Basin*, Mongolia. **Team member**. Field survey, fossil collection, stratigraphic mapping, and paleomagnetic sampling in the Eocene

Khaitchin Formation, Eocene Kholdboldzhi Formation, Eocene-Oligocene Elean Formation, and Oligocene Hsanda Gol Formation. PI: Brian Kraatz (then UC Berkeley).

- 2005 *San Juan Basin*, New Mexico, USA. **Team member.** Yale Peabody Museum expedition. Fossil collection and survey in the Paleocene Nacimiento Formation and Eocene San Jose Formation. PI: Walter Joyce (Yale Peabody Museum).
- 2001–2004 *Human Evolution Research Center*, University of California, Berkeley. Various tasks under the supervision of Tim White and F. Clark Howell including collections research, computer graphics work, website development, and remote sensing imagery acquisition, modification, and interpretation.
- 2000–2004 *Barnosky Lab*, U.C. Berkeley. Taphonomic and ecological analysis of a mid-Pleistocene fossil assemblage from Porcupine Cave, Colorado. Paleomagnetic and biostratigraphic analysis of mid-Miocene vertebrates from Railroad Canyon, Idaho. Under supervision of Anthony D. Barnosky.
- 2000 *Archaeor*. Fremont, California, USA. Salvage archaeology of an ancient Native American burial site with *Archaeor*, a cultural resource management firm.
- 2000 *Proyecto Arqueologico Valle Inferior Del Rio Ulua*, Honduras. Conducted archaeological excavation work, including human skeletal recovery and inventory. PI: Rosemary Joyce (University of California, Berkeley).

Fellowships, Grants, Prizes, and Honors

- 2011-2012 Leibniz-DAAD Research Fellowship, Museum für Naturkunde, Berlin
- 2010 Fine Outreach for Science GigaPan Fellow (Carnegie Mellon University)
- 2009-2011 National Science Foundation International Research Fellowship
- 2009 George Gaylord Simpson Prize (Yale Peabody Museum)
- 2009 Philip M. Orville Prize for research in the Earth Sciences (Yale Geology)
- 2007-2009 Subgrant for paleontological fieldwork in the United Arab Emirates from the Revealing Hominid Origins Initiative (National Science Foundation, USA—HOMINID).
- 2008 Visiting Scholar, Anis Makdisi Program in Literature (American University of Beirut)
- 2007 National Science Foundation Graduate Student Fellow travel grant.
- 2007 Yale Institute for Biospheric Studies ECOSAVE grant in aid of research.
- 2007 Yale John F. Enders Fund Award.
- 2006 Yale Institute for Biospheric Studies Center for Field Ecology Student Pilot Grant.
- 2006 Geological Society of America Graduate Student Grant, *Ross Research Award*.
- 2006-2009 National Science Foundation Graduate Research Fellow
- 2005 National Science Foundation Graduate Research Fellowship *Honorable Mention*
- 2004 Bateman Prize, Department of Geology & Geophysics, Yale University.
- 2001 Golden Key Honor Society
- 2001 Phi Beta Kappa Honor Society

Invited Presentations

- 2010 Nature Conservation Center for Sustainable Futures and the Natural History Museum, American University of Beirut, Lebanon. 'Biodiversity in a Changing World: Prehistoric Biotas of the Middle East'.
- 2009 Department of Biology, American University of Beirut, Lebanon. 'Arabian Fossils: The Late Miocene River Fauna of Abu Dhabi'.
- 2009 Department of Biology, American University of Beirut, Lebanon. 'Environmental and Ecological Change in the Neogene Fossil Record'.
- 2009 Al Ain Palace Museum, United Arab Emirates. Public lecture in Arabic on 'Fossil Discoveries from Al Gharbiya'.
- 2009 Cultural Foundation, Abu Dhabi, United Arab Emirates. Public lecture on 'New Discoveries from the Yale University and ADACH late Miocene Fossil Project'.
- 2008 Freethought Society, American University of Beirut. Lecture for event entitled 'There is Grandeur in this View of Life'.
- 2008 Anis Makdisi Program in Literature, American University of Beirut. Public lecture titled "Ancestors Discovered: Paleontology and the Evolution of Life". March 19.
- 2008 Cultural Foundation, Abu Dhabi, United Arab Emirates. Public lecture on 'New Fossil Discoveries from Abu Dhabi's Western Region'.
- 2007 Yale Peabody Museum Board of Trustees meeting. Graduate student representative speaker.
- 2004 Stanford University. "Fossils from the late Miocene of Arabia." Given at the Department of Anthropology's weekly graduate and faculty seminar.

Teaching and Mentoring Experiences

- 2008–2010 Recruitment and mentoring of undergraduates from American University of Beirut for participation in Baynunah Paleontology Project fieldwork.
- 2006 Fall Teaching Assistant: ANTH299a Human Functional Anatomy, Department of Anthropology, Yale University.
- 2005 Spring Teaching Assistant: G&G120b Global Environmental Change, Department of Geology & Geophysics, Yale University.

Museum Collections Visited for Study

American Museum of Natural History, New York; Harvard Peabody Museum; Maden Tetkik ve Arama (MTA), Turkey; Musée Nationale d'Histoire Naturelle, Paris; National Museum of Ethiopia; National Museums of Kenya; Natural History Museum, London; University of Ankara Paleoanthropology Laboratory; University of California Museum of Paleontology (UCMP); University of California Museum of Vertebrate Zoology (MVZ); Yale Peabody Museum.

Languages Spoken

English (Fluent). Arabic (Fluent). French (Intermediate).