

# **Kevin Toshio Uno**

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## **Education**

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- PhD 2012, University of Utah; Geology: *Advances in terrestrial paleoecology from intratooth stable isotope profiles in tooth enamel and tusk dentin*
- MS 2008, University of Utah; Geology: *A geochemical study of the origin of debris bands at Storglaciären, Sweden*
- BA 2001, Carleton College; Geology: *Upper Cretaceous paleomagnetism from Umbria, Italy: "Anchored" poles set proposed True Polar Wander event adrift*

## **Appointments & Experience**

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- 2016-present: Assistant Research Professor, Lamont-Doherty Earth Observatory (LDEO)
- 2012-2016: Postdoctoral Research Scientist, LDEO
- 2011-2012, 2008-2009: Graduate Research Assistant, Univ. of Utah
- 2010-2011: Graduate Research Fellow, Univ. of Utah
- Fall 2009. Visiting Instructor, Carleton College
- Spring 2008: Adjunct Instructor, Univ. of Utah
- 2005-2007 NSF GK12 Fellow, Univ. of Utah
- 2004-2005. Staff Geologist, URS Corporation, Oakland, CA.

## **Research Interests**

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- Paleoecology and paleoclimate reconstructions using light stable isotopes from molecular biomarkers in sediments(C,H), tooth enamel (C,O), and paleosol carbonate (C,O).
- Pyrogenic biomarkers for reconstructing fire in ancient ecosystems
- Radiocarbon dating of modern (post-bomb) tissues in ecology and wildlife forensics
- Modern elephant ecology using stable isotope records in tusks (C,N,O), molars (C,O), and tail hair (C,N)
- Noble gas, tritium, and stable isotopes as tracers in glacial processes

## **Publications** (\* = undergraduate advisee)

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Cerling, T.E., Barnette, J.E., Chesson, L.A., Douglas-Hamilton, I, Gobush, K.S, **Uno, K.T.**, Wasser, S.K., Xu, X., 2016, Radiocarbon dating of seized ivory confirms rapid decline in African elephant populations and provides insight into illegal trade, Proceedings of the National Academy of Sciences, 10.1073/pnas.1614938113

**Uno, K.T.**, Polissar, P.J., \*Kahle, E., Feibel, C.S., Harmand, S., Roche, H., and deMenocal, P.B., 2016a, A Pleistocene paleovegetation record from plant-wax biomarkers from the Nachukui Formation, West Turkana, Kenya, Philosophical Transactions of the Royal Society B, v. 371, no. 1698, p. 10.

**Uno, K.T.**, Polissar, P.J., \*Jackson, K., and deMenocal, P.B., 2016b, A Neogene biomarker record of vegetation change in eastern Africa, Proceedings of the National Academy of Sciences, v. 113, no. 23, p. 6355-6363.

## Publications (cont.)

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Cerling, T. E., Andanje, S. A., Blumenthal, S. A., Brown, F. H., Chritz, K. L., Harris, J. M., Hart, J. A., Kirera, F. M., Kaleme, P., Leakey, L. N., Leakey, M. G., Levin, N. E., Manthi, F. K., Passey, B. H., and **Uno, K. T.**, 2015, Dietary changes of large herbivores in the Turkana Basin, Kenya from 4 to 1 Ma: *Proceedings of the National Academy of Sciences*, v. 112, no. 37, 11467–11472.

Kusaka, S., Takanori N., **Uno, K.T.**, Nakatsukasa, M., & Cerling, T.E., 2015, Carbon isotope ratios of human tooth enamel record evidence of terrestrial resource consumption during the Jomon period, Japan: *Journal of Archeological Science*, v. 158, no. 2, p.300-311.

Saarinen, J., Karme, A., Cerling, T.E, **Uno, K.T.**, Säilä, L., Kasiki, S., Ngene, S., Obari, T., Mbua, E., Manthi, K., and Fortelius, M., 2015, A new tooth wear-based dietary analysis method for Proboscidea (Mammalia): *Journal of Vertebrate Paleontology*, v. 35, no. 3, p. e918546.

Patnaik, R., Cerling, T.E, **Uno, K.T.**, Fleagle, J.G., 2014, Diet and habitat of Siwalik primates *Indopithecus*, *Sivaladapis* and *Theropithecus*: *Annales Zoologici Fennici*, v. 51, no. 1-2, p.123-142.

**Uno, K. T.**, Quade, J., Fisher, D., Wittemyer, G., Douglas-Hamilton, I., Andanje, S. A., Omondi, P., Litoroh, M., and Cerling, T. E., 2013, Bomb-curve radiocarbon measurement of recent biologic tissues and applications to wildlife forensics and stable isotope (paleo)ecology: *Proceedings of the National Academy of Sciences*, v. 110, no. 29, p. 11736-11741.

Kimura, Y., Jacobs, L.L., Cerling, T.E., **Uno, K.T.**, Ferguson, K.M., Flynn, L.J., Patnaik, R., 2013, Fossil Mice and Rats Show Isotopic Evidence of Niche Partitioning and Change in Dental Ecomorphology Related to Dietary Shift in Late Miocene of Pakistan, *PLoS ONE* 8(8): e69308. doi:10.1371/journal.pone.0069308.

Cerling, T. E., Manthi, F. K., Mbua, E., Leakey, M. G., Leakey, L. N., Leakey, R. E., Brown, F. H., Grine, F. E., Hart, J. A., Kaleme, P., Roche, H., **Uno, K. T.**, and Wood, B. A., 2013, Stable isotope-based diet reconstructions of Turkana Basin hominins: *Proceedings of the National Academy of Sciences*, v. 110, no. 26, p. 10501-10507.

Bibi, F., Souron, A., Bocherens, H., **Uno, K.**, and Boisserie, J.-R., 2013, Ecological change in the lower Omo Valley around 2.8 Ma: *Biology Letters*, v. 9, no. 1 p.1-4.

Macharia, A., **Uno, K.**, Cerling, T., and Brown, F., 2012, Isotopically distinct modern carbonates in abandoned livestock corrals in northern Kenya: *Journal of Archaeological Science*, v. 39, no. 7, p. 2198-2205.

Moore, P. L., Iverson, N. R., **Uno, K. T.**, Dettinger, M. P., Brugger, K. A., and Jansson, P., 2012, Entrainment and emplacement of englacial debris bands near the margin of Storglaciären, Sweden: *Boreas*, p. 71-83.

Cerling, T. E., Mbua, E., Kirera, F. M., Manthi, F. K., Grine, F. E., Leakey, M. G., Sponheimer, M., **Uno, K. T.**, and Lee-Thorp, J., 2011, Reply to Godfrey et al.: Outside the box: *Proceedings of the National Academy of Sciences*.

Cerling, T. E., Mbua, E., Kirera, F. M., Manthi, F. K., Grine, F. E., Leakey, M. G., Sponheimer, M., and **Uno, K. T.**, 2011, Diet of *Paranthropus boisei* in the early Pleistocene of East Africa: *Proceedings of the National Academy of Sciences*, v. 108, no. 23, p. 9337-9341.

**Uno, K. T.**, Cerling, T. E., Harris, J. M., Kunimatsu, Y., Leakey, M. G., Nakatsukasa, M., and Nakaya, H., 2011, Late Miocene to Pliocene carbon isotope record of differential diet change among East African herbivores: *Proceedings of the National Academy of Sciences*, v. 108, no. 16, p. 6509-6514.

**Publications submitted or in progress**

**Uno, K.T.**, Polissar, P.J., Bonnefille, R., and deMenocal, P.B., Late Pliocene step-wise grassland expansion and mammalian evolutionary events in the Lower Omo Valley, Ethiopia: *In Prep*.

**Uno, K.T.**, Rivals, F., Bibi, F., Pante, M., and de la Torre, I., Large mammal diets and paleoecology of Olduvai Bed II, Tanzania from tooth wear and stable isotope analyses, *In prep* for Journal of Human Evolution (invited contribution).

**Selected Abstracts**

**Uno, K.T.**, Polissar P.J., \*Jackson, K., deMenocal P.B., 2015, The Late Miocene rise of C<sub>4</sub> vegetation in eastern Africa documented by terrestrial plant waxes in marine cores, American Geophysical Union (AGU) fall meeting, San Francisco, CA.

**Uno, K.T.**, Polissar P.J., Snell, K.E., Lukens, W.E., Fox-Dobbs, K., Haveles, A.W., Martin, R.A. and Fox, D.L., 2015, Plant wax biomarkers in late Neogene paleosols as archives of Great Plains vegetation, GSA Abstracts with Programs, v. 47, n. 7, p.716.

\*Jackson, K., **Uno, K.T.**, Polissar P.J., deMenocal P.B., 2015, Changing vegetation in Northeast Africa: Plant wax carbon isotope ratios indicate late Miocene appearance of C<sub>4</sub> grasses, Volume 47, GSA Abstracts with Programs, v. 47, n. 7, p.XX.

**Uno, K.T.**, Polissar P.J., Bonnefille, R., Lepre, C., deMenocal P.B., 2014, A Plio-Pleistocene molecular isotopic record of Turkana Basin vegetation, American Geophysical Union (AGU) fall meeting, San Francisco, CA.

\*Fischer-Femal, B., Polissar, P., **Uno, K.T.**, Fox-Dobbs, K., Fetrow, A., Roepke, L., Snell, K., Fox, D.L., Feinberg, J., Martin, R., 2014, Reconstructing Vegetation Changes from Biomarkers in Modern Soils and Late Neogene Paleosols in a Grassland, Meade Basin, KS, USA, American Geophysical Union (AGU) fall meeting, San Francisco, CA.

**Uno, K. T.**, Polissar P.J., Bonnefille R., Brown F.H., Feibel C.S., \*Kahle E.C., Lepre C.J., Levin N.E., deMenocal P.B., 2013, Plant wax biomarkers in fluvial-lacustrine sediments from the Omo-Turkana and Awash basins in eastern Africa, AGU fall meeting, San Francisco, CA.

**Uno, K. T.**, Fisher, D.C., and Cerling, T. E., 2013, Towards quantitative reconstructions of diet and environment using stable isotope profiles in tissues: examples from elephants, Volume 45, GSA Abstracts with Programs, p XX.

**Uno, K. T.**, 2012, Enamel maturation and intratooth stable isotope profiles in elephant (*Loxodonta africana*) molars: A new tool for evaluating seasonality in terrestrial paleoenvironments from proboscidean teeth, J. of Vert. Paleontology, 32, p. 186-187.

Moore, P.L., Iverson, N.R., **Uno, K.T.**, Brugger, K.A., and Dettinger, M., 2011, Entrainment and uplift of basal sediment to the surface of a polythermal glacier margin, Storglaciären, Sweden, Volume 43, GSA Abstracts with Programs, p. 217.

**Uno, K.T.**, Cerling, T.E., Fisher, D.C., Wittemyer, G., 2009, Extracting climate signals from a modern elephant tusk by carbon isotope and histological analyses, GSA Abstracts with Programs, Vol. 41, No. 7, p. 311.

**Uno, K.T.**, Cerling, T.E., Nakaya, H., Nakatsukasa, M., Kunimatsu, Y., 2008, Stable carbon and oxygen isotope ratios of fossil tooth enamel from the Nakali and Namurungule Formations, Kenya: Capturing the C<sub>3</sub>-C<sub>4</sub> transition in East African equid diet at ~9.6 Ma, J. of Vert. Paleontology, 28, 3, p 155A.

Godsey, H.S.; Chapman, D.S., Hynek, S.A.; Jarrell, E, Johnson, W.P., Naftz, D.L., Neuman, C.R., **Uno, K.T.**, 2006a, Saline Lakes: Platforms for Place-Based Scientific Inquiry by K-12 Students, Eos Trans. AGU, 87, Fall Meet. Suppl., Abstract H52A-07.

### Selected Abstracts (cont.)

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Godsey, H.S., Petersen, E.U., Chapman, D.S., Harbison, C.W, Hynek, S.A., **Uno, K.T.**, and Wilkinson, E., 2006b, WEST (Water, the Environment, Science, and Teaching): Linking Scientists, Teachers, and Students through Watershed Education, GSA Abstracts with Programs, Vol. 38, No. 7, p. 361.

**Uno, K.**, et al., 2006,  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  Stable Isotopic Enrichment of Ice from a Debris Band on Storglaciären, Eos Trans. AGU, 87, Fall Meet. Suppl., Abstract C31A-1231.

**Uno, K.T.**, and Bice, D.M. 2001, Upper Cretaceous Paleomagnetism from Umbria, Italy: "Anchored" Poles set Proposed True Polar Wander Event Adrift, Eos Trans. AGU, 82, Spring Meet. Suppl., Abstract. (*Won AGU Outstanding Student Paper Award*)

### Grants and Fellowships

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- 2015 NSF Archeology; Lead PI: Joe Farre, Baylor U. (\$40K total); Co-PI Uno (\$5K)
- 2014 IVORY: Isotope Verification of Region and Year (Co-PI), (\$201K)
- 2013 Wenner-Gren Foundation for Anthropological Research (\$20K)
- 2013 NSF Earth Life Transitions Grant; Lead PI: David Fox (\$640K total); Co-PI's Polissar and Uno (\$110K)
- 2013 Lamont-Doherty Earth Observatory (LDEO) Climate Center Grant (\$10K)
- 2012 LDEO Postdoctoral Fellowship (\$122K)
- 2010 University of Utah Graduate Research Fellowship (\$15K)
- 2011 GSA Student Travel Grant
- 2008 Society of Vertebrate Paleontology Travel Grant
- 2005-2007 NSF GK-12 Fellowships (\$60K)
- Kresge Science Foundation Research Grant (\$5K in 2000; \$1K in 1999)

### Awards and Honors

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- 2012 Outstanding PhD Student Award, U of U Dept. of Geol. and Geophysics
- 2001 American Geophysical Union Outstanding Student Paper Award
- 2001 Magna Cum Laude, Carleton College
- 2001 Distinction for undergraduate thesis
- 2001 Elected Student Member of Sigma Xi

### Invited Talks

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- Lamont-Doherty Earth Observatory (LDEO), Special Seminar, 5/17/16
- Univ. California, Davis, Dept. of Earth and Planetary Sciences, 5/3/16
- Princeton University, Dept. of Geosciences, 3/24/16
- Stony Brook University, Dept. of Geosciences, 2/24/16
- GSA Annual Mtg, (T184. African Environments across Space and Time), 11/2/15
- Royal Society Conference on Major Transitions in Human Evolution, London, 10/22/15
- Lafayette College, Dept. of Geology, 10/2/15
- King Abdullah Univ. of Science & Tech., Earth Science Seminar, 4/22/15
- CUNY Staten Island, Department Seminar, 4/1/15
- Baynunah Paleontology Conference, Abu Dhabi Culture and Tourism Authority, 12/10/14
- LDEO, Biology and Paleoenvironment Seminar, 11/3/14
- Wildlife Conservation Society, New York, NY, 5/14/14
- City College New York, Dept. of Earth and Atmos. Sciences, 5/9/14
- Millersville Univ, PA, Wildlife Forensics colloquium, 4/9/14
- Stony Brook University, Dept. of Geosciences, 3/25/14
- GSA Annual Mtg, (T240: Biogeochemical data in paleoecology), 10/30/13
- Pace University, 10/9/13
- American Museum of Natural History, Comparative Biology Seminar, 9/30/13
- LDEO, Biology and Paleoenvironment Seminar, 5/31/13
- Middlebury College, Dept. of Geology, 3/1/13
- Society of Vert. Paleontology Romer Prize Session, 10/17/12
- LDEO Symposium titled "Did Climate Change Shape Human Evolution?", 4/20/12

## Invited Talks (cont.)

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- Utah Valley University, Dept. of Earth Science Seminar, 4/10/12
- Anthropological Society of Nippon Annual Meeting; Okinawa, Japan. 11/5/11
- Society of Vert. Paleontology Annual Meeting: Symposium on African Fauna; 10/13/10
- Kyoto University, Dept of Physical Anthropology; 3/24/10
- Luther College, Dept of Chemistry; 11/13/09
- Carleton College, Chemistry Department; 10/12/09
- National Museum of Kenya, Department of Paleontology; 5/18/09

## Teaching

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- Fall 2015. Instructor, Environmental Change and Human Evolution (Columbia University)
- June 2010- 2012. Lab Instructor for Stable Isotopes in Ecology short course (U of Utah)
- Fall 2009. Visiting Instructor, Introduction to Geology (Carleton College)
- Spring 2009. Teaching Assistant (TA), Turkana Basin Field Course, Kenya (U of Utah)
- Spring 2008. Adjunct Instructor, Earthquakes and Volcanoes (U of Utah):
- Fall 2007. TA, Introduction to Geochemistry (U of Utah)
- Fall 2007. TA, Aqueous Geochemistry (U of Utah)
- 2005-2007. NSF GK-12 Fellow: Rose Park and Escalante Elementary Schools (SLC, UT)
- 2002- 2003. Instructor, Japanese Exchange and Teaching Program, Okayama, Japan
- Fall 2001. TA, Trimester-long Geology Program in Italy, 2001 (Carleton College)
- Spring 2001. TA, Oceans and Atmospheres (Carleton College)
- Spring 2000. TA, Igneous and Metamorphic Petrology (Carleton College)

## Advising

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- 2015. Kevin Jackson, Lafayette College: summer intern project on a Neogene record of African vegetation from carbon isotopes in plant waxes extracted from marine sediments.
- 2014-2015. 1) Brenden Femal, Univ. of Puget Sound: senior thesis on modern soil and paleosol biomarkers from Meade Basin, Kansas; 2) Jenny Pensky, Barnard College: senior thesis on Siwalik vegetation and hydroclimate change from biomarkers in the Bengal Fan.
- 2013-2014. Emma Kahle, Columbia Univ.: senior thesis on East African paleoclimate from stable isotope records in leaf waxes.
- 2010-2012. Daniel Davis, Univ. of Utah: senior project on carbon isotope enrichment between elephant diet and enamel using breath CO<sub>2</sub> as a proxy.
- 2008-2010. Blake Hethmon, AMES high school, SLC, UT: science fair projects on elephant ecology from isotopes in tail hair (2008-9) and diet-turn-over times from isotopes in caterpillar frass (2010). He won First Place in the Chemistry Division of the Utah State Science Fair in 2010.

## Laboratory Experience

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- 2012-present. Organic Geochemistry and Stable Isotope Labs, Lamont Doherty Earth Observatory. Method development for extracting biomarkers from terrestrial sediments and analyzing *n*-alkanes and *n*-alkanoic acids for C and H isotope ratios.
- 2008-2012. Stable Isotope Lab, U of Utah. Lab management duties include running carbonate and organic samples by off-line and on-line methods, and upkeep and maintenance of a cantankerous MAT 252 isotope ratio mass spectrometer and associated peripherals (Finnigan CarboFlo, Costech Elemental Analyzer, GC, and Merchantek (CO<sub>2</sub>) laser ablation system).
- 2007-present. Department of Paleontology, National Museum of Ethiopia and National Museums of Kenya. Sampling of fossil teeth for stable isotope sampling. Includes training museum staff on sampling procedures and co-authoring the protocol for isotope sampling for the National Museums of Kenya.
- 2006-2008. Dissolved Gas Lab (D.K. Solomon), U of Utah. Traditional off-line vacuum extraction techniques for noble gases; analysis of noble gases (He, Ne, Ar, Kr, & Xe) using quadrupole and magnetic sector (MAP 215) mass spectrometry; Design, construction, and implementation of a portable (field) gas extraction line for glacial ice samples.

## Laboratory Experience (cont.)

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- 2000. Institute for Rock Magnetism, U of Minnesota. Thermal and AF stepwise demagnetization; NRM analysis using a superconducting rock magnetometer; characterization of rock magnetism using hysteresis, IRM acquisition, Low Temperature Remanence, and S-Ratio measurements.
- 1998-present. General lab methods (e.g., wet chemistry, cutting and polishing, thin sections, etc).

## Field Work

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- 2015. Sediment sampling in the Great Plains (Meade Basin, Kansas) for molecular biomarkers.
- 2014. 1) Paleosol sampling in the Great Plains (Meade Basin, Kansas) for molecular biomarkers (with P. Polissar, Dave Fox and others). 2) Paleosol and lacustrine sediment sampling in the Lower Omo Valley, southern Ethiopia for molecular biomarkers (with JR Boisserie). 3) Paleontology and geology of the late Miocene Baynunah Formation, Abu Dhabi (with F. Bibi).
- Summer 2009. Geology and paleoanthropology east of Lake Turkana (with F.H. Brown and T.E. Cerling).
- Summer 2007. Geology west of Lake Turkana, Kenya (with F.H. Brown, N. Levin, and T.E. Cerling); Geology and paleontology of the Miocene Nakali Formation in the Suguta Valley, Kenya (with M. Nakatsukasa and Y. Kunimatsu, Kyoto Univ.).
- Summer, 2006. Storglaciaren, Sweden: Geochemical investigation of ice and debris-bands at the glacier terminus (with N. Iverson and P. Moore, Iowa State Univ.).
- Winter, 2001. SEA Semester. Six weeks aboard the 138' tall ship SSV Corwith Cramer. Calculated geostrophic flow using CTD data collected in and around the Windward Passage.
- Summer 2000. Undergraduate thesis research on paleomagnetism and rock magnetism of Late Cretaceous limestones in the Umbria-Marche sedimentary sequence (with D. Bice (Penn State) and A. Montanari (Osservatorio Geologico di Coldigioco)).
- August-October 1999. Carleton College Geology Program in Italy; Study of structural and tectonic evolution of the Apennines as revealed through the Umbria-Marche sedimentary sequence.
- July 1999. Field Assistant for Carleton Student and Faculty Research; Sampled Cambrian limestones in Canadian Rockies for stable carbon isotope stratigraphy (with C. Cowan and M. Stewart (Carleton College) and M. Saltzman (Ohio State Univ.)).

## Press Coverage

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### Radiocarbon dating of ivory shows tusks move quickly through illegal trade network

- [Recently Killed Elephants Are Fueling the Ivory Trade](#), Science, 11/7/16
- [Slaughter of Elephants for Their Ivory Intensifies](#), Agence France-Press, 11/7/16
- [Most Illegal Ivory Is Coming From Recently Killed Elephants](#), The Verge, 11/7/16
- China Central TV: News interview, 11/17/16.
- [Most Illegal Ivory Sold Comes From Illegally Killed Elephants](#), Wired, 11/08/16
- NTN24 TV (Colombia): Interview regarding China's domestic ivory trade ban, 01/13/17.

### Bomb-curve Radiocarbon Dating to Ivory and Horn as a Forensic Tool (2013-2015)

- [TechKnow \(Aljazeera America\) Interview](#), June 2015.
- [Columbia Magazine](#): A Sound of Trumpets, 8/1/14.
- [The Telegraph](#): Time is running out to save the rhino, 2/12/14.
- [The Economist](#): The elephant in the room, 7/6/13.
- BBC World News: live radio interview, 7/2/13.
- NPR's [Morning Edition](#): Radiocarbon Clues Help Track Down Poached Elephant Ivory, 7/2/13.
- [The Guardian](#): Measuring carbon age in ivory could help combat poaching, study shows, 7/2/13.
- [National Geographic](#) Daily News: Cold War Radioactivity Can Date Illegal Elephant Ivory, 7/1/13.

## Press Coverage (cont.)

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### Study reveals surprising diet of human ancestor “Nutcracker man”

- [Huffington Post](#): Ancient 'Nutcracker Man,' *Paranthropus boisei*, Didn't Actually Eat Nuts, 5/2/11.
- Smithsonian Magazine, June, 2011.
- [Science Daily](#): No Nuts for 'Nutcracker Man', 5/3/11.

### Study shows African mammals adopted grassy diets at different rates over millions of years

- [The Salt Lake Tribune](#): U. scientists track ancient mammal diets from isotopes in teeth, 4/4/11.
- Science on [NBC News.com](#): Grazing animals shaped human evolution, 4/4/11.

## Professional Development

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- 2013. Preparing for an Academic Career in the Geosciences, Boulder, CO.
- 2006. Mineralogical Society of America short course: Paleoaltimetry, Snowbird, UT.
- 2005. Stable Isotopes in Ecology, Salt Lake City, UT.

## Professional Service

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- Journal Reviewer for *Annales Zoologici Fennici*; *Earth and Planetary Science Letters*; *Geochimica et Cosmochimica Acta*; *Journal of the Geological Society of London*; *Journal of Human Evolution*; *Oecologia*; *Organic Geochemistry*; *Palaeogeography, Palaeoclimatology, Palaeoecology*; *Proceedings of the National Academy of Sciences*; *Proceedings of the Royal Society B*; *Quaternary Science Reviews*; *Science Advances*
- Proposal Reviewer for The Leakey Foundation
- Science Fair judge (2005-2010): Salt Lake City public and private schools.
- Expert testimony: New York State Assembly hearing on proposed ivory moratorium in NY state; January 16, 2014.

## Professional Affiliations

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- American Geophysical Union
- Geological Society of America
- Mineralogical Society of America
- Society of Vertebrate Paleontology

## Languages

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- Proficient in Japanese
- Basic Italian