

March 2021

CURRICULUM VITAE

BENJAMIN H. PASSEY

Born: December 3, 1976, Lincoln, Nebraska, USA

ACADEMIC POSITION

Associate Professor, Department of Earth and Planetary Sciences, and Program in the Environment, University of Michigan

RESEARCH INTERESTS

Development and application of methods in isotope geochemistry for reconstructing past climates and environments. High-precision stable isotope geochemistry, including triple oxygen isotopes and clumped isotopes.

EDUCATION

B.S.	Geology	University of Utah	2001
M.S.	Geology	University of Utah	2004
Ph.D.	Geology	University of Utah	2007

PROFESSIONAL EXPERIENCE

Research and Teaching Assistant, University of Utah, 2001–2007
Dreyfus Postdoctoral Scholar in Geochemistry, Caltech, 2007–2009
Assistant Professor (2009–2015), Associate Professor (2015–2016),
Johns Hopkins University
Associate Professor (2016–), University of Michigan

PROFESSIONAL AFFILIATIONS

Geological Society of America
Geochemical Society
Mineralogical Society of America
American Geophysical Union

TEACHING

University of Michigan

Earth 131 Earth and Environmental Chemistry (ugrad). Fall 2018, 2019.
Earth 331 Climate and climate change (ugrad). Winter 2017, 2018, 2019, 2020, 2021
Earth 580/596 Isotope Geochemistry (grad). Fall 2017, Winter 2021

Johns Hopkins University

AS 270.103 Intro. to Global Environmental Change (ugrad). Fall 2010, 2011, 2012, 2013.
AS 270.220 The Dynamic Earth: An Introduction to Geology (ugrad). Fall 2015.
AS 270.313 Isotope Geochemistry (grad / upper ugrad). Spring 2010, 2012, 2013, 2015.
AS 270.377 Climates of the Past (grad / upper ugrad). Spring 2011, 2012, 2013.
AS 270.625 Seminar in Biogeochemistry (grad seminar). Spring 2011, 2012, 2013.
AS 270.633 Advanced Topics in Isotope Geochemistry (grad seminar). Fall 2011, 2012, 2013.

University of Utah

GG 3090 Earth Materials II (lower-level ugrad). Part semester instructor, Spring 2007.
GG 5660 Geochemistry (upper-level ugrad). Teaching Assistant (TA), Fall 2006.

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GG 4100 Optical Mineralogy and Petrology (upper-level ugrad). TA, Fall 2006.
GG 3300 The Water Planet (ugrad general education). TA, Spring 2004.
BIOL 6470 SIRFER Stable Isotope Short Course. Laboratory Assistant,
June 2002, 2003, 2004, 2005.

ADVISING

Postdoctoral

Dr. Tyler E. Huth (2018–)
Dr. Ian Z. Winkelstern (2016–2018). Now Affiliate Faculty, Grand Valley State University
Dr. Marina B. Suarez (2009–2011). Now Associate Professor, University of Kansas

Doctoral (as committee chair):

Nicholas Ellis (2019 –)
Natalie Packard (2018 –)
Dr. Dana Brenner (2014–2018). Now Stable Isotope Lab Manager, Johns Hopkins.
Dr. Haoyuan Ji (2011–2016). Now at Google, LLC, Kirkland, WA.
Dr. Huanting Hu (2011–2016). Now Research Scientist, Shanghai Jiao Tong University.
Dr. Gregory A. Henkes (2009–2014). Now Assistant Professor, SUNY Stony Brook.

Laboratory Staff:

Drake A. Yarian, 2017–2020

Undergraduate senior thesis:

Matt Sykes (class of 2013)
Tucker B. Gordon (class of 2016)

Visiting students and postdocs (extended visits):

Mr. Joonas Wasiljeff, University of Helsinki (2/19 – 3/19; 11/19–12/19).
Dr. Jeanine Ash, UCLA (1/16 – 4/16)
Ms. Sonal Jain, ITT Roorkee, India Fulbright Scholar (10/14 – 7/15)
Dr. Laiming Zhang, China University of Geosciences, (10/14 – 11/15)
Dr. Justin VanDeVelde, University of Plymouth (11/13 – 1/14; 11/14 – 1/15)
Dr. Laura Arppe, University of Helsinki (2/12 – 5/12)

LABORATORY

Co-director, University of Michigan ISO PALEO LAB (w/ Naomi Levin) 2016–present
This laboratory is centered around two Nu Perspective–IS mass spectrometers, and features custom-built automated prep systems for triple oxygen isotopes in waters, CO₂, and carbonates; clumped isotopes in CO₂ and carbonates; and laser ablation GC-IRMS analysis of fossil teeth.

Co-director, Johns Hopkins Stable Isotope Lab (w/ Naomi Levin). 2009–2016
This lab was centered around a Thermo MAT 253 mass spectrometer, and specialized in carbonate clumped isotopes (Δ_{47}); triple-oxygen isotopes ($\Delta^{17}\text{O}$) in waters, CO₂, and carbonates; laser-ablation GC-IRMS ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) of fossil teeth; δD and $\delta^{18}\text{O}$ analysis of waters (Los Gatos Research Instrument); and $\delta^{13}\text{C}$, $\delta^{18}\text{O}$ analysis of small (50 ug) carbonate samples.

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SERVICE

Departmental

2018–2020 Chair, Laboratory Advisory Committee
2020 Tenure and Promotion Committee (Assistant – Associate Professor)
2020 Promotion Committee (Lecturer I – Lecturer II)
2018–2019 Executive Committee
2018, 2019 Promotion Committee (Assistant – Associate Research Scientist)
2016–2018 Faculty Advisor, Michigan Geophysical Union
2016– Judge, Michigan Geophysical Union Annual Poster Competition

College / University

2018– Senate Assembly Representative for the college of LS&A
2011–2015 Laboratory Safety Committee, Homewood Campus, Johns Hopkins University

Professional

2019 Tenure & Promotion External Reviewer (Assist. – Assoc.)

Manuscript Reviews

ACS Earth and Space Chemistry, American Journal of Science, BMC Ecology, Chemical Geology, Earth and Planetary Science Letters, Ecology, Geochemistry, Geophysics, Geosystems, Geochimica et Cosmochimica Acta, Geological Society of America Bulletin, Geology, Geophysical Research Letters, Global Change Biology, Global Ecology and Biogeography, Journal of Archaeological Science, Journal of Geophysical Research, Biogeosciences, Journal of Human Evolution, Journal of Mammalogy, Journal of Sedimentary Research, Mammalian Biology, Nature, Nature Geoscience, Nature Communications, Naturwissenschaften, Oecologia, Palaeo-3, Paleoceanography, PNAS, Quaternary Science Reviews, Rapid Communications in Mass Spectrometry, Reviews in Mineralogy and Geochemistry, Science, Tectonics, Tectonophysics

Grant Proposal Reviews

US National Science Foundation, American Chemical Society, Austrian Science Foundation, Swiss National Science Foundation, Bergen Research Foundation, Norway

Co-chair, Session V11A: Between cold outcrop and a hot place: Validation of clumped isotopes and other novel geochemical proxies to shallow crustal thermometry. (w/ Cedric John, Tobias Kluge, and Gregory Henkes). American Geophysical Union Fall Meeting, San Francisco, CA, 15–19 December 2014,

Co-organizer, 3rd International Workshop on Clumped Isotopes, Harvard University, January 10–11, 2013 (w/ Dan Schrag, Hagit Affek, and Kate Dennis).

External thesis / dissertation reviewer:

Edward Odes, M.S., University of Witswatersrand, Department of Anthropology (2013)
Paul Sandberg, Ph.D., University of Colorado, Department of Anthropology (2012)
Thomas Schmid, Ph.D., ETH Zurich (2011)

RESEARCH GRANTS

Associate Professor Support Fund (University of Michigan Margaret and Herman Sokol Faculty Awards). \$83,965. 7/2020–6/2022. Development of a novel analytical approach and instrument for dual clumped-isotope paleothermometry.

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National Science Foundation EAR 1812549, \$294,835. 7/2018–6/2023
(co-I; N. Sheldon, PI) Collaborative Research: Green River Eocene Earth and Climate Observatory (GREECO).

American Chemical Society PRF 54850-ND2, \$110,000, 6/2015–8/2017
(PI) Oxygen-17 in sedimentary and diagenetic carbonates.

National Science Foundation EAR 1227076, \$147,206. 9/2012–8/2015
(PI) Collaborative Research: Constraining rates of C-O bond reordering in biogenic calcite: Implications for clumped isotope thermometry.

American Chemical Society PRF 50321-DNI12, \$100,000. 9/2010–8/2012
(PI) Carbonate 'clumped isotope' thermometry: constraining closure temperatures for the ^{13}C - ^{18}O order/disorder process in carbonate minerals.

National Science Foundation BCS 0948310, \$25,625. 3/2010–2/2012 (PI) Collaborative Research: Rodent Diets and Habitat Reconstructions in South Africa: an Actualistic and Applied Multidisciplinary Study.

GSA student research grant, 2005, Late Miocene terrestrial environments and C_4 vegetation in north-central China: An isotopic record from fossil mammals and soil carbonate

HONORS AND AWARDS

Outstanding Doctoral Student in Geology, University of Utah, 2007
Outstanding Student Talk, North-Central GSA, 2005
Outstanding Masters Student in Geology, University of Utah, 2003
Outstanding Undergraduate Student in Geology, University of Utah, 2001
Undergraduate Scholarships, University of Utah: Bullock-Keller Scholarship, 2000–2001; Dorothy Rice Goode Scholarship, 1999–2000; Mineralogical Society of Utah Memorial Scholarship, 1998–1999, Chevron Scholarship in Geophysics, 1997–1998

PUBLICATIONS

Google Scholar: 7888 citations, H-Index = 41. Scopus: 5714 citations, H-Index = 39.

¶ = student or postdoc primary advisee

§ = paper includes data from ISO PALEO LAB at the University of Michigan

* = paper includes data from the Stable Isotope Laboratory at Johns Hopkins University

Submitted / in review / in revision

¶§Huth TE, Passey BH, Cole JE, Lachniet MS, McGee D, Denniston RF, Levin NE, Triple oxygen isotope constraints on drivers of isotopic variability in speleothems: A case study from western USA cave systems. *Geochimica et Cosmochimica Acta*. In revision.

*Lehmann SB, Levin NE, Passey BH, Hu H, Cerling TE, Miller JH, Arppe L, Beverly EJ, Hoppe KA, Luyt J, Sealy J. Triple oxygen isotope distribution in modern mammal teeth and potential geologic applications. *Geochimica et Cosmochimica Acta*. In revision.

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Published / In Press

77. §Beverly EJ, Levin NE, Passey BH, Aron PG, Yarian DA, Page M, Pelletier EM (2021) Triple oxygen and clumped isotopes in modern soil carbonate along an aridity gradient in the Serengeti, Tanzania. *Earth and Planetary Science Letters* 567, 116952.
76. §Bernasconi S and 60 others including Passey B (2021) InterCarb: A community effort to improve inter-laboratory standardization of the carbonate clumped isotope thermometer using carbonate standards. *Geochemistry, Geophysics, Geosystems* 22, e2020GC009588.
75. ¶§Brenner DC, Passey BH, Holder RM, Viete DR (2021), Clumped-isotope geothermometry and carbonate U-Pb geochronology of the Alta Stock metamorphic aureole, Utah, USA: Insights on the kinetics of metamorphism in carbonates. *Geochemistry, Geophysics, Geosystems* 22, e2020GC009238.
74. §Aron P, Levin NE, Beverly EJ, Huth TE, Passey BH, Pelletier EM, Poulsen CJ, Winkelstern IZ, Yarian DA (2021), Triple oxygen isotopes in the water cycle. *Chemical Geology* 565, 120026.
73. §*Wang Y, Passey BH, Rupsa R, Tao D, Jiang S, Hannold C, Wang X, Lochner E, Tripathi A (2021) Clumped isotope thermometry of fossil and modern snail shells from the Himalayan-Tibetan Plateau: Implications for paleo-climate and paleo-elevation reconstructions. *GSA Bulletin*.
72. §Passey BH and Levin NE (2021) Triple oxygen isotopes in meteoric waters, carbonates, and biological apatites: implications for continental paleoclimate reconstruction. *Reviews in Mineralogy and Geochemistry, Volume 86, Triple Oxygen Isotope Geochemistry* (Bindeman IN, Pack A, eds.), p. 429-462.
71. §Bralower TJ, Cosmidis J, Fantle MS, Lowery M, Passey BH, Gulick SPS, and 30 others (2020) The habitat of the nascent Chicxulub crater. *AGU Advances* 1, e2020AV000208. <https://doi.org/10.1029/2020AV000208>
70. *Huth TE, Cerling TE, Marchetti DW, Bowling DR, Ellwein A, Passey BH, Fernandez DP, Valley JW, Orland IJ, (2020) Laminated soil carbonate rinds as a paleoclimate archive of the Colorado Plateau. *Geochimica et Cosmochimica Acta* 282, 227-244.
69. *Petersen SV and 29 others, including Passey BH (2019) Effects of improved ¹⁷O correction on interlaboratory agreement in clumped isotope calibrations, estimates of mineral-specific offsets, and temperature dependence of acid digestion fractionation. *Geochemistry, Geophysics, Geosystems* 20, 3495–3519.
68. *Passey BH and ¶Ji H (2019) Triple oxygen isotope signatures of evaporation in lake waters and carbonates: A case study from the western United States. *Earth and Planetary Science Letters* 518, 1-12.
67. *Huth TE, Cerling TE, Marchetti DW, Bowling D, Ellwein A, Passey BH (2019) Seasonal bias in soil carbonate formation and its implications for interpreting high-resolution paleoarchives: evidence from southern Utah. *JGR Biogeosciences* 124, 616-632.
66. *Ning Z, Zhang L, Huntington KW, Wang C, Dai J, Han Z, Passey BH, Qian X, Zhang J (2019) The burial and exhumation history of the Liuqu Conglomerate in the Yarlong Zangbo

- suture zone, southern Tibet: Insights from clumped isotope thermometry. *Journal of Asian Earth Sciences* 174, 205-217.
65. ¶*Henkes GA, Passey BH, Grossman EL, Shenton BJ, Yancey TE, Pérez-Huerta A (2018) Temperature evolution and the oxygen isotope composition of Phanerozoic oceans from carbonate clumped isotope thermometry. *Earth and Planetary Science Letters* 490, 40–50.
 64. ¶*Brenner DC, Passey BH, Stolper DA (2018) Influence of water on clumped-isotope bond reordering kinetics in calcite. *Geochimica et Cosmochimica Acta* 224, 42-63.
 63. Fan M, Ayyash SA, Tripathi A, Passey BH, Griffith EM (2018) Terrestrial cooling and changes in hydroclimate in the continental interior of the United States across the Eocene-Oligocene boundary. *Geological Society of America Bulletin*.
 62. Kotthoff U. and 18 others (2017) Reconstructing Holocene temperature and salinity variations in the western Baltic Sea region: a multi-proxy comparison from the Little Belt (IODP Expedition 347, Site M0059). *Biogeosciences*, 14, 5607-5632.
 61. *Leichliter J, Sandberg P, Passey B, Codron D, Avenant N, Paine O, Codron J, de Ruiter D, Sponheimer M (2017) Stable carbon isotope ecology of modern small mammals from the Sterkfontein Valley: Implications for habitat reconstruction in mosaic environments. *Palaeogeography, Palaeoclimatology, Palaeoecology* 485, 57-67.
 60. Sukselainen L, Kaakinen A, Eronen JT, Passey BH, Harrison T, Zhang Z, Fortelius M (2017) The palaeoenvironment of the middle Miocene pliopithecoid locality in Damiao, Inner Mongolia, China. *Journal of Human Evolution* 108, 31-46.
 59. Bonifacie M, Calmels D, Eiler JM, Horita J, Chaduteau C, Vasconcelos C, Agrinier P, Katz A, Passey BH, Ferry JM, Bourrand J-J (2017) Calibration of the dolomite clumped isotope thermometer from 25 to 350 °C, and implications for a universal calibration for all (Ca, Mg, Fe)CO₃ carbonates. *Geochimica et Cosmochimica Acta* 200, 255-279.
 58. *Leichliter J, Sponheimer M, Avenant N, Sandberg P, Paine O, Codron D, Codron J, Passey B (2016) Small mammal insectivore stable carbon isotope compositions as habitat proxies in a South African savanna ecosystem. *Journal of Archaeological Science Reports* 8, 335–345.
 57. Garcia N, Feranec RS, Passey BH, Cerling TE, Arsuaga J-L (2015) Exploring the potential of laser ablation carbon isotope analysis for examining ecology during the ontogeny of Middle Pleistocene hominins from Sima de los Huesos (northern Spain). *PLoS ONE* 10(12):e0142895. doi:10.1371/journal.pone.0142895.
 56. *Arppe L, Kaakinen A, Passey BH, Zhang Z, Fortelius M (2015) Small mammal tooth enamel carbon isotope record of C₄ grasses in late Neogene China. *Global and Planetary Change* 133, 288–297.
 55. Cerling TE, Andanje SA, Blumenthal SA, Brown FH, Chritz KL, Harris JM, Hart JA, Kirera FM, Kaleme P, Leakey LN, Leakey MG, Levin NE, Manthi FK, Passey BH, Uno KT (2015) Dietary changes of large herbivores in the Turkana Basin, Kenya from 4 to 1 Ma. *Proceedings of the National Academy of Sciences, USA* 112, 11467–11472.

54. Passey BH (2015) Biogeochemical tales told by isotope clumps. *Science* 348, 394–395.
53. *Shenton BJ, Grossman EL, Passey BH, Henkes GA[¶], Becker TP, Laya JC, Pérez-Huerta A, Becker SP, Lawson M (2015) Clumped isotope thermometry in deeply buried sedimentary carbonates: The effects of bond reordering and recrystallization. *Geological Society of America Bulletin* 127, 1036–1051.
52. Kaakinen A, Aziz HA, Passey BH, Zhang ZQ, Liu LP, Salminen J, Wang L, Krijgsman W. and Fortelius M (2015) Age and stratigraphic context of Pliopithecus and associated fauna from Miocene sedimentary strata at Damiao, Inner Mongolia, China. *Journal of Asian Earth Sciences* 100, 78–90.
51. *Fan M, Hough BG, Passey BH (2014) Middle to late Cenozoic cooling and high topography of the central Rocky Mountains: constraints from clumped isotope geochemistry. *Earth and Planetary Science Letters* 408, 35–47.
50. *Passey BH, Hu H[¶], Ji H[¶], Montanari S, Li S, Henkes GA[¶], Levin NE (2014) Triple oxygen isotopes in biogenic and sedimentary carbonates. *Geochimica et Cosmochimica Acta* 141, 1–25.
49. *Suarez MB[¶] and Passey BH (2014) Assessment of the clumped isotope composition of fossil bone carbonate as a recorder of subsurface temperatures. *Geochimica et Cosmochimica Acta* 140, 142-159.
48. *Henkes GA[¶], Passey BH, Grossman EL, Shenton BJ, Pérez-Huerta A, Yancey TE (2014) Temperature limits for preservation of primary calcite clumped isotope paleotemperatures. *Geochimica et Cosmochimica Acta* 139, 362-382.
47. Garzione CN, Auerbach DJ, Smith JJ-S, Rosario JJ, Passey BH, Jordan TE, Eiler JM (2014) Clumped isotope evidence for diachronous surface cooling of the Altiplano and pulsed surface uplift of the Central Andes. *Earth and Planetary Science Letters* 393, 173–181.
46. *Hough BG, Fan M, Passey BH (2014) Calibration of the clumped isotope geothermometer in soil carbonate in Wyoming and Nebraska: implications for paleoelevation and paleoclimate reconstruction. *Earth and Planetary Science Letters* 391, 110–120.
45. Eronen JT, Kaakinen A, Liu LP, Passey BH, Tang H, and Zhang ZQ (2014). Here be dragons: Mesowear and tooth enamel isotopes of the classic Chinese "Hipparion" faunas from Baode, Shanxi Province, China. *Annales Zoologici Fennici* 51, 227–244.
44. Wang Y, Xu Y, Khawaja S, Passey BH, Zhang C, Wang X, Li Q, Tseng ZJ, Takeuchi GT, Deng T, Xie G (2013) Diet and environment of a mid-Pliocene fauna from southwestern Himalaya: Paleo-elevation implications. *Earth and Planetary Science Letters* 376, 43-53. <http://dx.doi.org/10.1016/j.epsl.2013.06.014>
43. *Price GD, Passey BH (2013) Dynamic polar climates in a greenhouse world: Evidence from clumped isotope thermometry of early Cretaceous belemnites. *Geology* 41, 923-926. doi:10.1130/G34484.1

42. Kaakinen A, Passey BH, Zhang ZQ, Liu LP, Pesonen LJ, Fortelius M (2013) Stratigraphy and paleoecology of the classical dragon bone localities of Baode County, Shaanxi Province. p. 203-217. In Wang XM, Flynn LJ, Fortelius M, eds., *Fossil Mammals of Asia: Neogene Biostratigraphy and Chronology*. Columbia University Press, New York, 732 p.
41. *VanDeVelde JH, Bowen GJ, Passey BH, Bowen BB (2013). Climatic and diagenetic signals in the stable isotope geochemistry of dolomitic paleosols spanning the Paleocene-Eocene boundary. *Geochimica et Cosmochimica Acta* 109, 254-267.
40. *Henkes GA[¶], Passey BH, Wanamaker AD, Grossman EL, Ambrose WG Jr., Carroll ML (2013). Carbonate clumped isotope compositions of modern marine mollusk and brachiopod shells. *Geochimica et Cosmochimica Acta* 106, 307-325.
39. *Passey BH, Henkes GA[¶] (2012). Carbonate clumped isotope bond reordering and geospeedometry. *Earth and Planetary Science Letters* 351-352, 223-236.
38. Passey BH (2012) Reconstructing terrestrial environments using stable isotopes in fossil teeth and paleosol carbonates. In Linda C. Ivany and Brian Huber (eds.), Reconstructing Earth's Deep-Time Climate – The State of the Art in 2012. *Paleontological Society Papers* 18, 167-193.
37. *Henry AG, Ungar PS, Passey BH, Sponheimer M, Rossouw L, Bamford M, Sandberg P, de Ruiter DJ, Berger L (2012) The diet of *Australopithecus sediba*. *Nature* 487, 90-93. doi:10.1038/nature11185
36. Hynek SA, Passey BH, Prado JL, Brown FH, Cerling TE, Quade J (2012) Small mammal carbon isotope ecology across the Miocene-Pliocene boundary, northwestern Argentina. *Earth and Planetary Science Letters* 321-322, 177-188.
35. Cerling TE, Levin NE, Passey BH (2011) Stable isotope ecology in the Omo-Turkana Basin. *Evolutionary Anthropology* 20, 228-237.
34. *Dennis KJ, Affek HP, Passey BH, Schrag DP, Eiler JM (2011) Defining an absolute reference frame for 'clumped' isotope studies of CO₂. *Geochimica et Cosmochimica Acta* 75, 7117-7131.
33. *Suarez MB[¶], Passey BH, Kaakinen A (2011) Paleosol carbonate multiple isotopologue signature of active East Asian summer monsoons during the late Miocene and Pliocene. *Geology* 39, 1151-1154.
32. Ferry JM, Passey BH, Vasconcelos C, Eiler JM (2011) Formation of dolomite at 40-80 °C in the Latemar carbonate buildup, Dolomites, Italy, from clumped isotope thermometry. *Geology* 39, 571-574.
31. Lee-Thorp JA, Sponheimer M, Passey BH, de Ruiter DJ, Cerling TE (2010) Stable isotopes in fossil hominin tooth enamel suggest a fundamental dietary shift in the Pliocene. *Philosophical Transactions of the Royal Society B*. 365, 3389-3396.
30. Passey BH, Levin NE, Cerling TE, Brown FH, Eiler JM (2010) High-temperature environments of human evolution in East Africa based on bond ordering in paleosol carbonates. *Proceedings of the National Academy of Sciences, USA* 107, 11245-11249.

29. Zazzo A, Ballase, M, Passey BH, Moloney AP, Monahan FJ, Schmidt O (2010) The isotope record of short- and long-term dietary changes in sheep tooth enamel: Implications for quantitative reconstructions of paleodiets. *Geochimica et Cosmochimica Acta* 74, 3571-3586.
28. Cerling TE, Harris JM, Leakey MG, Passey BH, Levin NE (2010) Stable carbon and oxygen isotopes in East African mammals: modern and fossil. *In* Cenozoic Mammals of Africa, Werdelin L. and Sanders W. eds. University of California Press.
27. Huntington KW, Eiler JM, Affek HP, Guo W, Bonifacie M, Yeung LY, Thiagarajan N, Passey B, Tripathi A, Daëron M, Came R (2009) Methods and limitations of 'clumped' CO₂ isotope (Δ_{47}) analysis by gas-source isotope ratio mass spectrometry. *Journal of Mass Spectrometry*, 44, 1318-1329. DOI 10.1002/jms.1614
26. Sponheimer M, Codron D, Passey BH, de Ruiter DJ, Cerling TE, Lee-Thorp JA (2009) Using carbon isotopes to track dietary change in modern, historical, and ancient primates. *American Journal of Physical Anthropology*, 140, 661-670.
25. Passey BH, Ayliffe LK, Kaakinen A, Zhang ZQ, Eronen JT, Zhu YM, Zhou LP, Cerling TE, Fortelius M (2009) Strengthened East Asian summer monsoons during a period of high-latitude warmth? Isotopic evidence from Mio-Pliocene fossil mammals and soil carbonates from northern China. *Earth and Planetary Science Letters*, 277, 443-452.
24. Harris JM, Cerling TE, Leakey MG, Passey BH (2008) Stable isotope ecology of fossil hippopotamids from the Lake Turkana Basin of East Africa. *Journal of Zoology* 275, 323-331.
23. Cerling TE, Harris JM, Hart JA, Kaleme P, Klingel H, Leakey MG, Levin NE, Lewison RL, Passey BH (2008) Stable isotope ecology of the common hippopotamus. *Journal of Zoology* 276, 204-212.
22. Podlesak DW, Torregrossa A-M, Ehleringer JR, Dearing MD, Passey BH, Cerling TE (2007) Turnover of oxygen and hydrogen isotopes in the body water, CO₂, hair and enamel of a small mammal. *Geochimica et Cosmochimica Acta* 72, 19-35.
21. Passey BH, Cerling TE, Levin NE (2007) Temperature dependence of oxygen isotope acid fractionation for modern and fossil tooth enamels. *Rapid Communications in Mass Spectrometry* 21, 1-7
20. Passey BH, Eronen JT, Fortelius M, and Zhang ZQ (2007) Paleodiets and paleoenvironments of late Miocene gazelles from North China: Evidence from stable carbon isotopes. *Vertebrata Palasiatica* 45, 118-127. (Scientific publication with informal review).
19. Cerling TE, Ayliffe LK, Dearing MD, Ehleringer JR, Passey BH, Podlesak DW, Torregrossa AM, West AG (2007) Determining biological tissue turnover using stable isotopes: the reaction progress variable. *Oecologia* 151, 175-189.
18. Passey BH, and Cerling TE (2006) In situ stable isotope analysis ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) of very small teeth using laser ablation GC/IRMS. *Chemical Geology* 235, 238-249.

17. Sponheimer M, Passey BH, de Ruiter DJ, Guatelli-Steinberg D, Cerling TE, Lee-Thorp J (2006) Isotopic evidence for dietary variability in the early Hominin *Paranthropus robustus*. *Science* 314, 980-982.
16. Passey BH, Cerling TE, Chan MA (2006) Dam Fun: A scale-model classroom experiment for teaching basic concepts in hydrology and sedimentary geology. *Journal of Geoscience Education* 54, 487-490.
15. Levin NE, Cerling TE, Passey BH, Harris JM, Ehleringer JR (2006) A stable isotope aridity index for terrestrial environments. *Proceedings of the National Academy of Sciences* 103, 11201-11205.
14. Robinson TF, Sponheimer M, Roeder BL, Passey BH, Cerling TE, Dearing MD, and Ehleringer JR (2006) Digestibility and nitrogen retention in llamas and goats fed alfalfa, C₃ grass, and C₄ grass hays. *Small Ruminant Research* 64, 162-168.
13. Jokela T, Eronen JT, Kaakinen A, Liu LP, Passey BH, Zhang ZQ, and Fu MK (2005). Translation of Otto Zdansky's "The localities of the Hipparion fauna of Baode County in northwest Shanxi". *Palaeontologica Electronica* 8, Art. No. 3A.
12. Passey BH, Cerling TE, Schuster GT, Robinson TF, Roeder BL, Krueger SK (2005) Inverse methods for estimating primary input signals from time-averaged intra-tooth isotope profiles. *Geochimica et Cosmochimica Acta* 69, 4101-4116.
11. Passey BH, Robinson TF, Ayliffe LK, Cerling TE, Sponheimer M, Dearing MD, Roeder BL, Ehleringer JR (2005) Carbon isotopic fractionation between diet, breath CO₂, and bioapatite in different mammals. *Journal of Archaeological Science* 32, 1459-1470.
10. Cerling TE, Passey BH, Ayliffe LK, Cook CS, Ehleringer JR, Harris JM, Dhidha MB, Kasiki SM (2004). Orphans' tales: seasonal dietary changes in elephants from Tsavo National Park, Kenya. *Palaeogeography, Palaeoclimatology, Palaeoecology* 206, 367-376.
9. Ayliffe LK, Cerling TE, Robinson T, West AG, Sponheimer M, Passey BH, Hammer J, Roeder B, Dearing MD, Ehleringer JR (2003) Turnover of carbon isotopes in tail hair and breath CO₂ of horses fed an isotopically varied diet. *Oecologia* 139, 11-22.
8. Passey BH and Cerling TE (2004) Response to comment by M.J. Kohn on "Tooth enamel mineralization in ungulates: Implications for recovering a primary isotopic time-series" by B.H. Passey and T.E. Cerling (2002). *Geochimica et Cosmochimica Acta* 68, 407-409.
7. Sponheimer M, Robinson TF, Roeder BL, Passey BH, Ayliffe LK, Cerling TE, Dearing MD, Ehleringer JR (2003) An experimental study of nitrogen flux in llamas: is ¹⁴N preferentially excreted? *Journal of Archaeological Science* 30, 1649-1655.
6. Sponheimer M, Robinson T, Ayliffe L, Roeder B, Hammer J, Passey B, West A, Cerling T, Dearing D, Ehleringer J (2003) Nitrogen isotopes in mammalian herbivores: Hair δ¹⁵N values from a controlled feeding study. *International Journal of Osteoarchaeology* 13, 80-87.
5. Sponheimer M, Robinson T, Ayliffe L, Passey B, Roeder B, Shipley L, Lopez E, Cerling T, Dearing D, Ehleringer J (2003) An experimental study of carbon-isotope fractionation

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between diet, hair, and feces of mammalian herbivores. *Canadian Journal of Zoology* 81, 871-876.

4. Cerling TE, Harris JM, Passey BH (2003) Diets of east African Bovidae based on stable isotope analysis. *Journal of Mammalogy* 84, 456-470.
3. Sponheimer M, Robinson T, Roeder B, Hammer J, Ayliffe L, Passey B, Cerling T, Dearing D, Ehleringer J (2003) Digestion and passage rates of grass hays by llamas, alpacas, goats, rabbits, and horses. *Small Ruminant Research* 48, 149-154.
2. Passey BH and Cerling TE (2002) Tooth enamel mineralization in ungulates: Implications for recovering a primary isotopic time-series: *Geochimica et Cosmochimica Acta* 66, 3225-3234.
1. Passey BH, Cerling TE, Perkins ME, Voorhies MR, Harris JM, Tucker ST (2002) Environmental change in the Great Plains: An isotopic record from fossil horses. *Journal of Geology* 110, 123-140.

ANALYTICAL INNOVATION

Acid digestion / methanation / fluorination method for high-precision triple oxygen isotope analysis of carbonate minerals (w/ Huanting Hu). 2012–2013, Johns Hopkins University. Vacuum manifolds and circulating loop reactor for converting oxygen in CO₂ to oxygen in H₂O via high-temperature, catalyst-promoted reduction with H₂ gas. The H₂O is subsequently fluorinated to O₂, allowing high-precision measurement of triple oxygen isotopes ($\Delta^{17}\text{O}$). The method is described in Passey et al. (2014), *Geochimica et Cosmochimica Acta*.

Automated LA GC-IRMS extraction line for $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ of bioapatite. 2011, Johns Hopkins University. A partially automated extraction line for laser-ablation gas chromatography isotope ratio mass spectrometry analysis of $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ of bioapatite (including fossil teeth) and carbonates. The system couples a CO₂ laser to a helium flow-through sample chamber and gas extraction / clean-up lines, to a capillary GC column and continuous flow IRMS. The system is controlled by custom-written Labview software. The basic design is based on the manual extraction line and sample chamber described by Passey and Cerling (2006), *Chemical Geology*.

Automated extraction line for high-precision clumped isotope analysis of carbonates (w/ John Eiler). Original build 2007–2008, Caltech. Duplicate instruments constructed at Caltech and Johns Hopkins (2009–2010). An automated common acid bath device and flow-through / back-purge GC column for extracting and purifying CO₂ from carbonate minerals, for clumped isotope (Δ_{47}) analysis. The system is controlled by custom-written Labview software, and features a cartesian robot for placement of cryogen dewars on cold traps. The system is described in Passey et al. (2010), *PNAS*.

FIELDWORK

November 2011

Fayum Depression, Egypt: Eocene / Oligocene fluvial / nearshore marine paleoenvironments and paleoclimate.

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- July 2010 Bighorn Basin, Wyoming, USA: Early Eocene fluvial systems, paleosols, and stable isotope studies.
- July 2007, 2008 China (Inner Mongolia and Ninxia Province): Paleoenvironments of middle Miocene fossil mammals. Fluvial sedimentology and stable isotope stratigraphy.
- September 2004, 2005 China (Shanxi Province): Aeolian/fluvial sedimentology and stable isotope stratigraphy of the late Neogene 'hipparion' red clay and loess deposits.
- August 2003 Australia: Continent-wide sampling of modern faunal remains, plants, and natural waters for stable isotope ecology studies.
- March 1999 – June 2004 Cosmogenic isotope exposure age studies in the Colorado Plateau, including Capitol Reef and Grand Canyon National Parks.
- Dec. 2001, June 2002 Argentina (Catamarca Province): Tephrastratigraphy and stable isotope survey of late Miocene through Pleistocene terrestrial deposits.
- Aug. 2000 Kenya: Turkana basin stratigraphy relevant to paleoenvironments of human evolution, and modern floral and faunal collections from national parks.
- Feb. 1999 Ethiopia: Initial restudy of Kibish Formation, Ethiopia, to determine stratigraphic placement and age of early *Homo sapiens*

INVITED TALKS (Meetings, Symposia, Workshops)

- December 2020: Reviews in Mineralogy and Geochemistry Short Course: Triple Oxygen Isotope Geochemistry. December 18, 2020 (Zoom). Talk Title: "Triple oxygen isotopes in carbonates, biological apatites, and continental paleoclimate reconstruction."
- September 2019: Geological Society of America Annual Meeting, Phoenix, Arizona, USA, Session 220 T106: Biogeochemical signatures of fossils: From paleoclimate to diagenesis. Talk title: "The vertebrate triple oxygen isotope CO₂ barometer: Progress and challenges."
- November 2018: Geological Society of America Annual Meeting, Indianapolis, Indiana, USA, Session T118: Paleoenvironmental reconstructions from Biogenic Carbonates. Talk title: "Triple oxygen isotopes in terrestrial biominerals: A new tool for environmental and ecological reconstruction."
- October 2016: Geological Society of America Annual Meeting, Denver, Colorado, USA, Session T157: Mineral equilibria, fluid flow and metamorphism: A celebration of John Ferry's career. Talk title: "Solid-state carbonate clumped isotope thermometry: Progress and applications."

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- October 2014: Geological Society of America Annual Meeting, Vancouver, BC, Canada, Session T126: Stable and clumped isotope record of topography, climate, and environments: Challenges and recent advances. Talk title: "Triple oxygen isotopes in the study of terrestrial paleoenvironments: Advances and opportunities."
- June 2014: The 24th V.M. Goldschmidt Conference, Sacramento, Session 9d: Advances in Chemical, Biologic and Biogeochemical Proxies for Terrestrial Paleoclimate Reconstruction. Talk title: "Triple oxygen isotopes in terrestrial carbonates"
- October 2013: Geological Society of America Annual Meeting, Denver, Colorado, USA Session T240: Advances in the Application of Biogeochemical Datasets in Paleoenvironmental and Paleoecological Studies. "Triple oxygen isotope compositions of carbonates: New tools for terrestrial paleoenvironmental research"
- November 2012: Paleontological Society Short Course at the Geological Society of America Annual Meeting, Charlotte, NC, USA: Reconstructing Earth's Deep Time Climate. Talk title: "Reconstructing terrestrial environments using stable isotopes in fossil teeth and paleosol carbonates."
- November 2012: Geological Society of America Annual Meeting, Charlotte, NC, USA, Session T127, Terrestrial Proxies of Paleoclimate and Paleoenvironment in Deep Time. Talk title "Carbonate clumped isotope thermometry of paleosol carbonates."
- April 2012: Climate Change / Human Evolution Workshop, Lamont-Doherty Earth Observatory, Palisades, NY, April 21-22 2012. Talk title: "Thermal environments of human evolution based on carbonate clumped isotope thermometry."
- August 2011: Second International Clumped Isotope Workshop, London, August 2011. Talk title: "Experimental studies of C-O bond reordering in calcite: Relevance to preservation and thermal history of carbonates."
- July 2011: (Keynote) 17th International Congress on the Carboniferous and Permian, Perth, Australia, July, 2011. Talk title: "Deep-time paleoclimate reconstruction using carbonate clumped isotope thermometry: A status report."
- April 2010: First International Meeting on Clumped Isotope Geochemistry, Seattle, WA, April 15-17, 2010. Talk title: "Environments of human evolution in East Africa based on the 'clumped isotope in carbonate' (δ_{47}) thermometer."
- June 2005: First International Workshop on Taphonomy and Biochemistry Applied to Human and Environmental Sciences, Paris, France, June 2005. Talk title: "The role of x-ray microCT, linear systems, and inversion theory in the meaningful interpretation of intra-tooth isotope profiles."

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INVITED TALKS (Departmental Seminars)

May 2015: University of Michigan, Dept. of Earth & Environ. Sci.
May 2015: Harvard University, Dept. of Earth & Planetary Sci.
April 2013: Tulane University, Dept. Earth & Environmental Sci.
March 2013: University of Maryland, Geochemistry Group Seminar
March 2013: Rutgers University, Earth & Planetary Sciences
October 2012: Texas A&M University, Department of Geology & Geophysics
February 2012: University of Florida, Department of Geological Sciences
February 2012: University of Minnesota, Department of Geology & Geophysics
January 2012: Syracuse University, Department of Earth Sciences
September 2011: University of Maryland, Geochemistry Group Seminar
September 2011: University of Utah, Department of Geology & Geophysics
May 2011: Carnegie Institute of Washington, Geophysical Lab
March 2011: ETH Zurich, Department of Earth Sciences
January 2011: Southern Methodist University, Department of Earth Sciences
December 2010: Princeton University, Department of Geosciences
September 2010: University of Maryland, Department of Geology
September 2009: Johns Hopkins University, Dept. Geography & Envir. Engineering
October 2009: Carnegie Institute of Washington, Geophysical Lab
December 2008: UC Santa Cruz, Department of Earth & Planetary Sciences
May 2008: UC Irvine, Department of Earth System Science
May 2008: Johns Hopkins University, Dept. of Earth & Planetary Sciences
February 2008: Lehigh University, Dept. of Earth & Environmental Science

PROFESSIONAL MEETING PRESENTATIONS (¶ denotes student or postdoc primary advisee.

^M = includes data from the UofM Isopaleolab; * = includes data from JHU stable isotope lab)

2020

¶^MHuth TE, Passey BH, Cole JE, Lachniet MS, Levin NE, Using triple oxygen isotopes to constrain speleothem paleorecord interpretation in western USA cave systems. Session PP048, American Geophysical Union Fall Meeting (Virtual), December 1–17, 2020.

^MKelson J, Petersen SV, Niemi NA, Passey B, Deltas in an estuary: clumped and triple oxygen isotope analyses reveal isotopically depleted headwaters in the early Eocene of Southern CA. Session PP024, American Geophysical Union Fall Meeting (Virtual), December 1–17, 2020.

^MKatz SA, Levin NE, Rodbell DT, Gillikin DP, Passey B, Reconstructing precipitation $d^{18}O$ from lacustrine carbonates using $\delta^{18}O$, Δ_{47} , and $\Delta^{17}O$: a modern case study from Junin, Peru, with implications for paleoclimate. Session PP048, American Geophysical Union Fall Meeting (Virtual), December 1–17, 2020.

^MBeverly EJ, Levin NE, Passey BH, Aron PG, Page M, Yarian D, Pelletier E, A new proxy for regional paleo-aridity using clumped and triple oxygen isotopes of modern soil carbonates from the Serengeti Ecosystem, Tanzania. Session T59, Annual Meeting of the Geological Society of America (GSA Connects Online), 26–30 October, 2020

¶^MHuth T, Passey B, Cole J & Levin N, Triple Oxygen Isotopes in Speleothems: A Case Study from Cave of the Bells, AZ, USA. Session 14d, Goldschmidt Annual Meeting (Virtual), 21–26 June, 2020.

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¶^MKelson J, Huth T, Levin N & Passey B, Fingerprinting Soil Water Evaporation with Triple Oxygen Isotopes of Pedogenic Carbonates. Session 14d, Goldschmidt Annual Meeting (Virtual), 21–26 June, 2020.

2019

(Invited) Passey BH, Hu H, Wasiljeff J, The vertebrate triple oxygen isotope CO₂ barometer: Progress and challenges. Geological Society of America Annual Meeting, Phoenix, Arizona, USA, September 22-25, 2019.

^M ¶Packard NR, Passey BH, Triple oxygen isotope signatures of evaporation at Bear Lake, Utah, since the Last Glacial Maximum. Annual Meeting of the American Geophysical Union, San Francisco, California, December 9 – 13, 2019.

2018

^{M*} ¶Brenner DC, Viete DR, Passey BH, Reaction kinetics in the Alta Stock contact metamorphic aureole, Utah: Insights from carbonate clumped isotope geothermometry. Annual Meeting of the American Geophysical Union, Washington, D.C., USA, December 10-14, 2018.

***(Invited)** Passey BH, Hu H, Lehmann SB, Winkelstern IZ, Levin NE, Triple oxygen isotopes in terrestrial biominerals: A new tool for environmental and ecological reconstruction. Geological Society of America Annual Meeting, Indianapolis, Indiana, USA, 4–7 November, 2018.

^MBeverly E, Levin NE, Passey BH, Quade J, Oxygen isotope variation in pedogenic carbonates and the potential to constrain paleoaridity. Goldschmidt Annual Meeting, Boston, 12–17 August, 2018.

^M ¶Winkelstern I and Passey BH, Variability in $\Delta^{17}\text{O}$, $\delta^{18}\text{O}$, and δD across six hydrologically diverse lake systems. Goldschmidt Annual Meeting, Boston, 12–17 August, 2018.

*Passey BH, Ji H, Winkelstern I, On the use of triple oxygen isotopes in evaporated lake systems to reconstruct $\delta^{18}\text{O}$ of unevaporated precipitation. Goldschmidt Annual Meeting, Boston, 12–17 August, 2018.

2017

¶Brenner DC, Passey BH, Computational modeling of carbonate clumped-isotope bond reordering. 6th International Clumped Isotope Workshop, Paris, France, August 10–12, 2017.

2016

***(Invited)** Passey BH, ¶Brenner D, ¶Henkes GA, ¶Ji H, Solid-state carbonate clumped isotope thermometry: Progress and applications. Geological Society of America Annual Meeting, Denver, Colorado, USA, 25–28 September, 2016.

*¶Brenner D, Passey B, Effects of water on carbonate clumped isotope bond reordering kinetics (poster). 5th International Clumped Isotope Workshop, St. Petersburg, Florida, USA, 6–9 January 2016.

2015

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*¶Brenner D, Passey B, Effects of water on carbonate clumped isotope bond reordering kinetics (talk). American Geophysical Union Fall Meeting, San Francisco, California, USA, 14–18 December 2015.

*Grossman E, Henkes G, Passey B, Shenton B, Yancey T, Perez-Huerta A, The evolution of Phanerozoic seawater – isotope paleothermometry finds consensus on Early Paleozoic warmth and constant seawater $\delta^{18}\text{O}$. American Geophysical Union Fall Meeting, San Francisco, California, USA, 14–18 December 2015.

*¶Hu H, Passey B, Lehmann S, Levin N, Montanari S, Chin K, Johnson B, Triple oxygen isotopes and clumped isotopes in modern vertebrate and dinosaur biominerals: Records of paleoecology, paleoaridity, and paleo-carbon-cycling. American Geophysical Union Fall Meeting, San Francisco, California, USA, 14–18 December 2015.

*VanPlantinga A, Grossman E, Passey B, Randklev C, Clumped isotope verification of $\delta^{18}\text{O}$ -based freshwater mussel shell growth chronology for a high-resolution climate and river discharge record. American Geophysical Union Fall Meeting, San Francisco, California, USA, 14–18 December 2015.

*Huth TE, Cerling TE, Bowling DR, Marchetti DW, Passey BH, Soil carbonate pendants from southern Utah as a new paleorecord: Demonstrating pendant formation during summer. Geological Society of America Annual Meeting, Baltimore, Maryland, USA, 1–4 November 2015.

*Lehmann SB, Levin NE, Passey BH, Cerling TE, Hu, H, Triple oxygen isotopes in teeth: Implications for reconstructing paleoaridity. Geological Society of America Annual Meeting, Baltimore, Maryland, USA, 1–4 November 2015.

*Henkes GA, Yancey TE, Grossman EL, Passey BH, Schrag DP, Temperatures of Chicxulub carbonate accretionary lapilli formation from clumped isotopes. Geological Society of America Annual Meeting, Baltimore, Maryland, USA, 1–4 November 2015.

2014

***(Invited)** ¶Henkes G, Passey B, Grossman E, Shenton B, Perez-Huerta A, Preservation of carbonate clumped isotopes in sedimentary paleoclimate archives. American Geophysical Union Fall Meeting, San Francisco, CA, USA, 15–19 December 2014.

*Shenton B, Grossman E, Passey B, Henkes G, Laya J, Perez-Huerta A, Clumped isotope thermometry in deeply buried sedimentary carbonates: The effects of C-O bond reordering and recrystallization. American Geophysical Union Fall Meeting, San Francisco, CA, USA, 15–19 December 2014.

Snell K, Eiler J, Wernicke B, Peppe D, Fox D, Fetrow A, Passey B, Disentangling topographic and climatic change during the Late Cretaceous and Cenozoic in the Western US Cordillera. American Geophysical Union Fall Meeting, San Francisco, CA, USA, 15–19 December 2014.

*Thiagarajan N, Passey B, Keeling R, Eiler J, Seasonal variations of stable, including clumped, isotopologues of CO_2 in air: Initial observations from La Jolla, CA. American Geophysical Union Fall Meeting, San Francisco, CA, USA, 15–19 December 2014.

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*VanDeVelde J, Price G, Passey B, Grimes S, Early Cretaceous ocean dynamics from clumped isotope thermometry. American Geophysical Union Fall Meeting, San Francisco, CA, USA, 15–19 December 2014.

***(Invited)** Passey BH, Levin NE, Ji H, Li S, Hu H Triple oxygen isotopes in the study of terrestrial paleoenvironments: Advances and opportunities. Geological Society of America Annual Meeting, Vancouver, BC, Canada, 19–22 October, 2014.

*¶¶Hu H, Passey BH, Montanari S, Chin K Constraints on late Jurassic and Cretaceous atmospheric $p\text{CO}_2$ and primary productivity from triple oxygen isotopes in dinosaur eggshells. Geological Society of America Annual Meeting, Vancouver, BC, Canada, 19–22 October, 2014.

*¶¶Ji H, Passey BH, Li S, Levin NE Triple oxygen isotopes in soils and lakes. Geological Society of America Annual Meeting, Vancouver, BC, Canada, 19–22 October, 2014.

*Fan M, Hough B, Passey BH Middle to late Cenozoic high topography and climate cooling in the central Rocky Mountains: Constraints from clumped isotope geothermometry. Geological Society of America Annual Meeting, Vancouver, BC, Canada, 19–22 October, 2015.

*Ayyash S, Fan M, Passey BH, Griffith EM Late Eocene-early Oligocene paleoclimate and paleoenvironment from the White River Formation in eastern Wyoming. Geological Society of America Annual Meeting, Vancouver, BC, Canada, 19–22 October, 2015.

***(Invited)** Passey BH, ¶¶Hu H, ¶¶Ji H, Montanari S, Li S, ¶¶Henkes GA, Levin NE Triple oxygen isotopes in terrestrial carbonates. *24th V.M. Goldschmidt Meeting, Sacramento, CA, 8–13 June 2014.*

Kaakinen A, Aziz HA, Passey BH, Zhang Z, Liping L, Krijgsman W, Fortelius M. Stratigraphical investigations on a new Miocene fossil-bearing sequence in Central Inner Mongolia, China. *EGU General Assembly 2014, Vienna, Austria, 27 April – 2 May, 2014.*

2013

***(Invited)** ¶¶Henkes GA, Passey BH, Grossman EL, Pérez-Huerta A, Shenton B, Yancey TE. Constraints on Phanerozoic paleotemperature and seawater oxygen isotope evolution from the carbonate clumped isotope compositions of Late Paleozoic marine fossils. *Annual Meeting of the American Geophysical Union, San Francisco, USA, December 9–13, 2013.*

*¶¶Hu H, Passey BH, Montanari S, Levin N, Li S. A deep-time CO_2 barometer based on triple oxygen isotope compositions of dinosaurian eggshell carbonate. *Annual Meeting of the American Geophysical Union, San Francisco, USA, December 9–13, 2013.*

*Shenton B, Grossman EL, Passey BH, ¶¶Henkes GA, Becker SP, Pottorf RJ. Thermal history of the Mississippian-Pennsylvanian boundary at Arrow Canyon, NV, USA: Insights from carbonate clumped isotopes and fluid inclusion microthermometry. *Annual Meeting of the American Geophysical Union, San Francisco, USA, December 9–13, 2013.*

***(Invited)** Passey BH, Levin NE, ¶¶Hu H, Li S, ¶¶Ji H, ¶¶Henkes GH. Triple oxygen isotope compositions of carbonates: New tools for terrestrial paleoenvironmental research.

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Geological Society of America Annual Meeting, Denver, Colorado, USA. October 27-30, 2013.

- *Fan M, Hough B, Passey B. Late Miocene atmospheric circulation and high topography in the Central Rocky Mountains: Constraints from integrated carbonate clumped isotope and volcanic glass hydrogen isotope studies. *Geological Society of America Annual Meeting, Denver, Colorado, USA. October 27-30, 2013.*
- *Levin NE, Bedaso ZK, Passey BH, Quade J. Pliocene warmth and ecosystem change in Eastern Africa. *Geological Society of America Annual Meeting, Denver, Colorado, USA. October 27-30, 2013.*
- *Passey BH, Hu H, Montanari S, Li S, Levin NE, Triple oxygen isotope compositions of late Cretaceous dinosaur eggshells and implications for atmospheric carbon dioxide. *The 23rd V.M. Goldschmidt Conference, Florence, Italy, August 25–30, 2013.*
- *Henkes GA, Rick TC, Passey BH, Carbonate clumped isotope thermometry of archaeological shell from the Chesapeake Bay. *Society for American Archaeology 78th Annual Meeting, Honolulu, Hawaii, April 3–7, 2013.*

2012

- ***(Invited)** Passey BH, Carbonate clumped isotope thermometry of paleosol carbonates. *2012 Geological Society of America Annual Meeting, Charlotte, North Carolina, November 4-7, 2012.*
- *Henkes GA, Grossman EL, Yancey TE, Passey BH Clumped isotope thermometry of Carboniferous brachiopods and the effects of burial heating. *The 22nd V.M. Goldschmidt Conference, Montreal, Canada, June 24-29, 2012.*
- *Passey BH, Henkes GA Carbonate clumped isotope closure temperatures. *The 22nd V.M. Goldschmidt Conference, Montreal, Canada, June 24-29, 2012.*
- *Guo W., Kim S-T, Yuan J, Farquhar J, Passey BH ^{13}C - ^{18}O bonds in dissolved inorganic carbon: Toward a better understanding of the clumped isotope thermometer in biogenic carbonates. *The 22nd V.M. Goldschmidt Conference, Montreal, Canada, June 24-29, 2012.*
- *Sandberg P, Passey B, Lee-Thorp J., Sponheimer M, Ditchfield P, Van Gervin D Intra-tooth stable isotope analysis of human dental tissues: laser ablation of enamel and serial sections of dentine collagen in permanent first molars and canines. *The 81st Annual Meeting of the American Association of Physical Anthropologists, Portland, USA, April 2012.*

2011

- *Suarez MB, Passey BH, Carbonate clumped isotope thermometry of fossil bone and dentin: Prospects for use as a ground temperature thermometer. *Geological Society of America Annual Meeting, Minneapolis, Minnesota. October 2011.*

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- *Passey BH, ¶Suarez MB, Kaakinen A, Late Miocene and Pliocene East Asian monsoon circulation inferred from multiple-isotope signatures of paleosol carbonates from northern China. *Geological Society of America Annual Meeting, Minneapolis, Minnesota. October 2011.*
- *Kraft RA, Levin NE, Passey BH, Rose KD, Chew AE, Early Eocene paleoenvironments in Wyoming based on stable isotope ecology of fossil mammals. *Geological Society of America Annual Meeting, Minneapolis, Minnesota. October 2011.*
- *Kaufman AJ, Peng Y, Passey BH, Mineralogical control on carbonate clumped isotope temperatures from a Neoproterozoic cap carbonate in Brazil. *Geological Society of America Annual Meeting, Minneapolis, Minnesota. October 2011.*
- ***(Invited)** Passey BH, ¶Henkes G, Experimental studies of C-O bond reordering in calcite: relevance to preservation and thermal history of carbonates. *2nd International Clumped Isotope Workshop, London, August 2011.*
- ***(Keynote)** Passey BH, ¶Henkes G, Grossman EL, Yancey TC, Reconstructing deep-time paleoclimate using carbonate clumped isotope thermometry: A status report. *17th International Congress on the Carboniferous and Permian, Perth, Australia, July, 2011.*

2010

- ***(Invited)** ¶Henkes GA, Price GC, Ambrose WG, Carol ML, Passey BH Clumped isotope thermometry of modern and early Cretaceous molluscan carbonate from high-latitude seas. *Annual Meeting of the American Geophysical Union, San Francisco, USA. December 2010.*
- *¶Suarez MB, Passey BH, Kaakinen A, Pliocene and late Miocene soil temperatures in the Chinese Loess Plateau based on clumped-isotope thermometry of paleosol carbonates. *Annual Meeting of the American Geophysical Union, San Francisco, USA. December 2010.*
- *¶Kraft RA, Levin NE, Mueller RG, Passey BH, Joyce A, Isotopic record of Holocene paleoclimate from paleosols in the Nochixtlan Valley, Oaxaca, Mexico. *Geological Society of America Annual Meeting, Denver, Colorado. October 2010.*
- *VanDeVelde JH, Bowen GJ, Passey BH, A clumped isotope hydroclimatologic record through the Paleocene-Eocene thermal maximum in southwestern North America. *Geological Society of America Annual Meeting, Denver, Colorado. October 2010.*
- *Passey BH. Experimental study of solid-state ¹³C-¹⁸O bond reordering in calcite. *20th Annual Goldschmidt Conference, Knoxville, TN. June 2010.*
- *Price, GD, Passey BH. Carbonate clumped-isotope paleothermometry of sub-Arctic early Cretaceous fossils. *20th Annual Goldschmidt Conference, Knoxville, TN, June 2010.*
- (Invited)** Passey BH, Quaternary Research Center Spring Workshop: 'Clumped isotopes in recent and fossil soil carbonates' *First International Meeting on Clumped Isotope Geochemistry, Seattle, WA, April 15-17, 2010.*

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2009 and earlier

- Passey BH, JM Eiler, M Daëron, J Quade, CN Garziona, JJ Smith, TE Cerling, NE Levin 'Clumped isotope' paleothermometry of soil carbonates: a status report. *EOS Trans. 90(52) AGU, Fall Meet. Suppl., Abstract PP12B-01, December 2009.*
- Passey BH, JM Eiler, NE Levin, TE Cerling, 'Barefoot on hot ground: Formation temperatures of Plio-Pleistocene soil carbonates in East Africa based on the clumped isotope in carbonate (Δ_{47}) thermometer'. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract PP11D-02. December 2008.*
- Passey BH, TF Robinson, JW Singer, TE Cerling, "Cut-and-dried: leaf water is the primary amplifier of an aridity signal in animal body water $\delta^{18}\text{O}$ ". *Isoecol VI, Honolulu, HI, August 2008.*
- Passey BH, LK Ayliffe, TE Cerling, M Fortelius, A Kaakinen, JT Eronen, ZQ Zhang, "A regionally resolved history of C_4 vegetation in North China since the late Miocene", *2nd International Palaeontological Congress, Beijing, China, June 2006*
- Passey BH, M Fortelius, A Kaakinen, YM Zhu, ZQ Zhang, LP Zhou, "Paleoenvironments and mammal communities of the Late Neogene Red Clay at Baode, Shanxi, North China", *Society of Vertebrate Paleontology, Mesa, Arizona, October 2005.*
- Passey BH, TE Cerling, "Equid $\delta^{18}\text{O}$ in the Neogene of Nebraska: Relationship with ungulate diversity, and discussion of mammalian $\delta^{18}\text{O}$ as a paleoenvironmental proxy", *Society of Vertebrate Paleontology, Mesa, Arizona, October 2005.*
- (Invited)** Passey BH, TE Cerling, "The role of x-ray microCT, linear systems, and inversion theory in the meaningful interpretation of intra-tooth isotope profiles", *First International Workshop on Taphonomy and Biochemistry Applied to Human and Environmental Sciences, Paris, France, June 2005.*
- Passey BH, Cerling TE, "Improvements in laser ablation GC/IRMS ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) methodology for isotopic analysis of small bioapatite samples", *Geological Society of America North Central Section, Minneapolis, Minnesota, May 2005.*
- Passey BH, Cerling TE, Chan MA, Dam Fun: Interactive teaching of sedimentological and hydrological principles using a see-through dam-reservoir model", *Geological Society of America Annual Meeting, Seattle, Washington, November 2003.*
- Passey BH, Cerling TE, Shuster GR, Inversion of stable isotope signals in tooth enamel: recovering the primary isotope time-series", *Geological Society of America Annual Meeting, Seattle, Washington, November 2003.*
- Passey BH, Cerling TE, Ayliffe LK, Sponheimer M, Hammer J, Robinson TF, Roeder B, "Seasonal isotopic data from Nebraska fossil horses, and insights from developing cow molars", *Society of Vertebrate Paleontology, Bozeman, Montana, October 2001.*
- Passey BH, Cerling TE, Perkins M, Tucker ST, Voorheis MR, "Timing and nature of C_4 biomass expansion in Nebraska" *Geological Society of America Annual Meeting, Denver, Colorado. October 1999.*