

## Gabriel J. Bowen

---

Geology & Geophysics Department  
University of Utah  
115 South 1460 East  
Salt Lake City, UT 84112  
(801)585-7925  
[gabe.bowen@utah.edu](mailto:gabe.bowen@utah.edu)

---

### Education:

- 1999 - 2003 **University of California**, Santa Cruz, California  
*Ph.D.*, Earth Sciences (12/03)
- 1995 - 1999 **University of Michigan**, Ann Arbor, Michigan  
*B.S. with highest honors*, Geological Sciences (4/99)

### Positions Held:

- 07/16 – present **University of Utah**, Salt Lake City, Utah  
*Professor*, Geology and Geophysics  
*Co-Director*, Stable Isotope Facility for Environmental Research (SIRFER)  
*Member*, Global Change and Sustainability Center
- 07/12 – 06/16 **University of Utah**, Salt Lake City, Utah  
*Associate Professor*, Geology and Geophysics  
*Co-Director*, Stable Isotope Facility for Environmental Research (SIRFER)  
*Member*, Global Change and Sustainability Center
- 08/10 – 06/12 **Purdue University**, West Lafayette, Indiana  
*Associate Professor*, Earth and Atmospheric Sciences  
*Co-Director*, Purdue Stable Isotope Facility  
*Member*, Purdue Climate Change Research Center
- 01/06 – 08/10 **Purdue University**, West Lafayette, Indiana  
*Assistant Professor*, Earth and Atmospheric Sciences  
*Co-Director*, Purdue Stable Isotope Facility  
*Member*, Purdue Climate Change Research Center
- 03/04 – 12/05 **University of Utah**, Salt Lake City, Utah  
*Postdoctoral Research Associate*, Biology
- 05/99 – 08/99 **Conoco, Inc.**, Lafayette, Louisiana  
*Geology and Geophysics Intern*, Deepwater Exploration

### Grants and Contracts (lead proposer unless indicated, total = \$7.94 million):

- 07/16 – 06/20 Collaborative Research: ABI Development: ORIGIN: Origin Inference from Geospatial Isotope Networks; \$1,511,791 (\$719,632 to Univ. Utah); NSF.
- 07/15 – 06/18 P-E Land-C: Terrestrial Mediation of Carbon Cycle Response Through the Paleocene-Eocene Thermal Maximum; \$293,014; NSF.
- 06/14 – 09/17 NEON Water Isotope Analysis at the SIRFER Facility; \$141,660; NEON.
- 09/13 – 08/16 MRI: Acquisition of an Isotope Ratio Mass Spectrometer for Tracing Human-Environment Interactions; \$629,942; NSF.
- 08/12 – 08/14 Linking Coastal Terrestrial Ecosystems and Eustatic Sea-Level Changes: A Case Study in the Tornillo Group (Big Bend National Park, TX); \$100,000; ACS-PRF.

- 02/12 – 01/17 Collaborative Research: Integrated Research for Continental Ecology (ITCE): Bridging Scales and Systems with Isotopes; \$2,155,797 to Bowen; NSF; co-PI w/ Jim Ehleringer, Univ. of Utah, and 3 others.
- 01/11 – 12/13 The Role of Tributaries and River Plumes as Nursery Areas for Yellow Perch and Round Gobies in Lake Michigan; \$384,973; Great Lakes Fisheries Trust; co-PI w/ Tomas Höök, Purdue, and 2 others.
- 10/10 – 09/13 Collaborative Research: Bighorn Basin Coring Project (BBCP)-Targeted Continental Drilling of Paleogene Hyperthermals; \$125,398 to Purdue Univ.; NSF; co-PI w/ William Clyde, Univ. of New Hampshire, and 7 others.
- 07/10 – 06/12 Hydrological Controls on Nitrogen Dynamics in Artificially Drained Agricultural Watersheds; \$75,000; Showalter Research Trust.
- 02/10 – 01/13 Constructing the Nearshore Lake Michigan Food Web Using Multiple Trophic Indicators; \$136,824 to Purdue Univ.; Great Lakes Seagrant; Co-PI w/ Tomas Höök, Purdue.
- 08/09 – 07/13 Collaborative Research: Integrating proxies and Earth System Models to elucidate water cycle dynamics: Did global warming cause an enhanced hydrological cycle in the Eocene?; \$472,346 to Purdue Univ.; NSF; Co-PI w/ Matthew Huber, Purdue, and Mark Pagani, Yale.
- 07/09 – 06/13 Prediction and Validation of Water Supply Sensitivity through GIS-based Integration of Environmental, Demographic, and Stable Isotope Data; \$239,991 + 3<sup>rd</sup> year option; DoD.
- 06/09 – 05/10 Water Cycle Impacts of Paleocene-Eocene Greenhouse Warming in the Arid Southwestern U.S.A.; \$16,750; Purdue Research Foundation.
- 08/08 – 07/12 Enabling End-to-End Geospatial Data Modeling Workflows via INPort: The Isotope Networks Portal; \$831,573; NSF.
- 07/07 – 07/09 Geographic and Seasonal Variations in Stable Isotope Ratios of Water; \$192,305 to Purdue; Univ. Utah/DoD; Co-PI w/ James Ehleringer, Univ. Utah.
- 09/06 – 08/11 Holocene Water Balance of the Northeastern Great Basin; \$401,894; NSF.
- 09/06 – 08/09 Collaborative Research: Dynamics of Carbon Release and Sequestration: Case Studies of Two Early Eocene Hyperthermals; \$179,989 to Purdue Univ.; NSF; co-PI w/ James Zachos, UCSC, and 7 others.
- 07/06 – 08/08 A New Feedback on the Carbon Cycle Involving Clays and the Hydrologic Cycle and the Stabilization of Climate During the Paleocene-Eocene Thermal Maximum; \$35,000; American Chemical Society.
- 06/06 – 05/07 A Novel Paleo-drought Proxy Based on Multiple Stable Isotope Ratios from Brine Shrimp Chitin; \$15,292; Purdue Research Foundation.
- 07/06 Towards an Integrative, Web-Based Data Analysis Tool for Water Isotope Networks at Purdue; \$7,000; Purdue Research Foundation.

**Awards:**

- 04/16 **Fellow**, Geological Society of America
- 11/14 **Fellow**, Kavli Frontiers of Science
- 12/12 **Fellow**, American Geophysical Union
- 12/12 **James B. Macelwane Medal**, American Geophysical Union
- 05/07 – 05/12 **Teaching Honor Roll**, Earth and Atmospheric Sciences, Purdue University
- 06/00 **Graduate Research Fellowship**, National Science Foundation
- 10/99 **Case Award for Attainment in Research**, University of Michigan
- 09/99 **Regent's Fellowship**, University of California, Santa Cruz
- 09/99 **Educational Advancement Scholarship**, Conoco, Inc.

04/99

**Highest Honors in Geological Sciences**, University of Michigan**Publications in Press (\*postdoc or student author):**

96. Anhäuser T., Greule M., Polag D., Bowen G.J. and Keppler F. (in press) Mean annual temperatures of mid-latitude regions derived from  $\delta^2\text{H}$  values of wood lignin methoxyl groups and its implications for paleoclimate studies. *Science of the Total Environment*.
95. Jameel Y.\*, Brewer S., Good S.P.\*, Tipple B.J., Ehleringer J.R. and Bowen G.J. (in press) Tap water isotope ratios reflect urban water system structure and dynamics across a semiarid metropolitan area. *Water Resources Research*.

**Journal Publications (<https://scholar.google.com/citations?user=N8vn4BcAAAAJ&hl=en>):**

94. Abels H.A., Lauretano V., van Yperen A.E., Hopman T., Zachos J.C., Lourens L.J., Gingerich P.D. and Bowen G.J. (2016) Environmental impact and magnitude of paleosol-carbonate carbon-isotope excursions marking five early Eocene hyperthermals in the Bighorn Basin, Wyoming. *Climate of the Past*, 12, 1151-1163. doi:10.5194/cp-12-1151-2016.
93. Bataille C.P.\*, Watford D.\*, Reugg S.\*, Lowe A.\* and Bowen G.J. (2016) Chemostratigraphic age model for the Tornillo Group: A possible link between fluvial stratigraphy and climate. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 457, 277-289. doi:10.1016/j.palaeo.2016.06.023.
92. Cerling T.E., Barnette J.E., Bowen G.J., Chesson L.A., Ehleringer J.R., Remien C.H., Patrick S., Tipple B. and West J.B. (2016) Forensic stable isotope biogeochemistry. *Annual Review of Earth and Planetary Sciences*, 44, 175-206. doi:10.1146/annurev-earth-060115-012303.
91. Ehleringer J.R., Barnette J.E., Jameel Y., Tipple B.J. and Bowen G.J. (2016) Urban water – a new frontier in isotope hydrology. *Isotopes in Environmental and Health Studies*. doi:10.1080/10256016.2016.1171217.
90. Hall S.J., Weintraub S.R.\*, Eiriksson D., Brooks P.D., Baker M.A., Bowen G.J. and Bowling D.R. (2016) Stream nitrogen inputs reflect groundwater across a snowmelt-dominated montane to urban watershed. *Environmental Science and Technology*, 50, 1137-1146. doi:10.1021/acs.est.5b04805.
89. Hinckley E.-L. S., Bonan G., Bowen G. J., Colman B., Duffy P., Goodale C. L., Houlton B., Marín-Spiotta E., Ogle K., Ollinger S. V., Paul E. A., Vitousek P. M., Weathers K. C. and Williams D. G. (2016) The soil and plant biogeochemistry sampling design for the National Ecological Observatory Network. *Ecosphere*, 7, e01234. doi: 10.1002/ecs2.1234.
88. Vander Zanden H.B.\*, Soto D.X., Bowen G.J. and Hobson K.A. (2016) Expanding the isotopic toolbox: Applications of hydrogen and oxygen stable isotope ratios to food web studies. *Frontiers in Ecology and Evolution*, 4:20. doi: 10.3389/fevo.2016.00020.
87. Bowen G. J. and Good S. P.\* (2015) Incorporating Water Isoscapes in Hydrological and Water Resource Investigations. *WIREs Water*, 2, 107-119. doi:10.1002/wat2.1069.
86. Bowen G. J., Maibauer B. J.\*, Kraus M. J., Röhl U., Westerhold T., Steimke A.\*, Gingerich P. D., Wing S. L. and Clyde W. C. (2015) Two massive, rapid releases of carbon during the onset of the Paleocene-Eocene thermal maximum. *Nature Geoscience*, 8, 44-47. doi:10.1038/NGEO2316.
85. Good S. P.\*, Noone D. and Bowen G. J. (2015) Hydrologic connectivity constrains partitioning of global terrestrial water fluxes. *Science*, 349, 175-177. doi:10.1126/science.aaa5931.
84. Good S. P.\*, Noone D., Kurita N., Benetti M. and Bowen G. J. (2015) D/H isotope ratios in the global hydrologic cycle. *Geophysical Research Letters*, 42. doi:10.1002/2015GL064117.
83. Gorski G.\*, Strong C., Good S.P.\*, Bares R., Ehleringer J.R. and Bowen G.J. (2015) Vapor hydrogen and oxygen isotopes reflect water of combustion in the urban atmosphere. *Proceedings of the National Academy of Sciences*, 112, 3247-3252. doi:10.1073/pnas.1424728112.
82. Johnson W. P., Frederick L. E., Millington M. E., Vala D., Reese B. K., Freedman D. R., Stenten C. J., Trauscht J. S., Tingey C. E., Solomon D. K., Fernandez D. P. and Bowen G. J. (2015) Potential Impacts to Perennial Springs from Tar Sand Mining, Processing, and Disposal on the Tavaputs Plateau, Utah, USA. *Science of the Total Environment*, 532, 20-30. doi:10/1016/j.scitotenv.2015.05.127.

81. Liu Z., Jian Z., Yoshimura K., Buenning N. H., Poulsen C. J. and Bowen G. J. (2015) Recent contrasting winter temperature changes over North America linked to enhanced positive Pacific North American pattern. *Geophysical Research Letters*, 42, 7750-7757. doi:10.1002/2015GL065656.
80. Vander Zanden H. B.\*, Tucher A. D., Hart K. M., Lamont M. M., Fujisaki I., Addison D. S., Mansfield K. L., Phillips K. F., Wunder M. B., Bowen G. J., Pajuelo M., Bolten A. B. and Bjorndal K. A. (2015) Determining origin in a migratory marine vertebrate: A novel method to integrate stable isotopes and satellite tracking. *Ecological Applications*, 25, 320-335. doi:10.1890/14-0581.1.
79. Vander Zanden H. B.\*, Wunder M. B., Hobson K. A., Van Wilgenberg S. L., Wassenaar L. I. and Bowen G. J. (2015) Space-time tradeoffs in the development of precipitation-based isoscape models for determining migratory origin. *Journal of Avian Biology*, 46, 658-667.
78. Bataille C. P.\*, Brennan S. R., Hartmann J., Moosdorf N., Wooller M. J. and Bowen G. J. (2014) A geostatistical framework for predicting variability in strontium concentrations and isotope ratios in Alaskan rivers. *Chemical Geology*, 389, 1-15. doi:10.1016/j.chemgeo.2014.08.030.
77. Bowen G. J., Liu Z., Vander Zanden H. B.\*, Zhao L. and Takahashi G. (2014) Geospatial assignment with stable isotopes in IsoMAP. *Methods in Ecology and Evolution*, 5, 201-206. doi:10.1111/2041-210X.12147.
76. Brennan S. R., Fernandez D. P., Mackey G., Cerling T. E., Bataille C. P.\*, Bowen G. J. and Wooller M. J. (2014) Strontium isotope variation and carbonate versus silicate weathering in rivers from across Alaska: Implications for provenance studies. *Chemical Geology*, 389, 167-181. doi:10.1016/j.chemgeo.2014.08.018.
75. Foley C. J., Bowen G. J., Nalepa T. F., Sepúlveda M. S. and Höök T. O. (2014) Stable isotope patterns of benthic organisms from the Great Lakes region reveal dietary overlap of *Diporeia* spp. and dreissenid mussels. *Canadian Journal of Fisheries and Aquatic Sciences*, 71, 1784-1795. doi:10.1139/cjfas-2013-0620.
74. Good S. P.\*, Kennedy C. D., Stalker J. C., Chesson L. A., Valenzuela L. O., Beasley M. M., Ehleringer J. R. and Bowen G. J. (2014) Patterns of local and non-local water resource use across the western United States determined via stable isotope intercomparisons. *Water Resources Research*, 50, 8034-8049. doi:10.1002/2014WR015884. (Highlighted in *Eos*)
73. Good S. P.\*, Mallia D. V., Lin J. C. and Bowen G. J. (2014) Stable isotope analysis of precipitation samples obtained via crowdsourcing reveals the spatiotemporal evolution of Superstorm Sandy. *PLoS ONE*, 9, e91117. doi:10.1371/journal.pone.0091117.
72. Liu Z., Yoshimura K., Bowen G. J., Buenning N. H., Risi C., Welker J. M. and Yuan F. (2014) Paired oxygen isotope records reveal modern North American atmospheric dynamics during the Holocene. *Nature Communications*, 5, 3701. doi:10.1038/ncomms4701.
71. Liu Z., Yoshimura K., Bowen G. J. and Welker J. M. (2014) Pacific North American teleconnection controls on precipitation isotopes ( $\delta^{18}\text{O}$ ) across the contiguous United States and adjacent regions: A GCM-based analysis. *Journal of Climate*, 27, 1046-1061 doi:10.1175/JCLI-D-13-00334.1.
70. Rüegg J., Gries C., Bond-Lamberty B., Bowen G.J., Felzer B. S., McIntyre N. E., Soranno P. A., Vanderbilt K. L. and Weathers K. C. (2014) Completing the data life cycle: Using information management in macrosystems ecology research. *Frontiers in Ecology and the Environment*, 12, 24-30. doi:10.1890/120375.
69. Vander Zanden H. B.\*, Wunder M. B., Hobson K. A., Van Wilgenberg S. L., Wassenaar L. I., Welker J. M. and Bowen G. J. (2014) Contrasting assignment of migratory organisms to geographic origins using long-term versus year-specific precipitation isotope maps. *Methods in Ecology and Evolution*, 5, 891-900. doi:10.1111/2041-210X.12229.
68. VanDeVelde J. H.\* and Bowen G. J. (2014) Isotope hydrology of early Paleogene Lake Flagstaff, central Utah: implications for Cordilleran evolution. *American Journal of Science*, 314, 1436-1461. doi:10.2475/10.2014.02.
67. West A. G., February E. C. and Bowen G. J. (2014) Spatial analysis of hydrogen and oxygen stable isotopes (“isoscapes”) in ground water and tap water across South Africa. *Journal of Geochemical Exploration*, 145, 213-222. doi:10.1016/j.gexplo.2014.06.009.
66. Bataille C. P.\*, Mastalerz M., Tipple B. J. and Bowen G. J. (2013) Influence of provenance and preservation on the carbon isotope variations of dispersed organic matter in ancient floodplain sediments. *Geochemistry, Geophysics, Geosystems*, 14, 4874-4891. doi:10.1002/2013GC004875.

65. Bowen G. J. (2013) Up in smoke: A role for organic carbon feedbacks in Paleogene hyperthermals. *Global and Planetary Change*, 109, 18-29. doi:10.1016/j.gloplacha.2013.07.001.
64. Clyde W. C., Gingerich P. D., Wing S. L., Röhl U., Westerhold T., Bowen G. J., Johnson K., Baczynski A., Diefendorf A., Schnurrenberger D., Noren A., Brady K. and the BBCP Science Team (2013) Bighorn Basin Coring Project (BBCP): A continental perspective on Early Paleogene hyperthermals. *Scientific Drilling*, 16, 21-31. doi:10.5194/sd-16-21-2013.
63. Cooper H. K. and Bowen G. J. (2013) Metal armor from St. Lawrence Island. *Arctic Anthropology*, 50, 1-19.
62. Liu Z., Bowen G. J., Welker J. M. and Yoshimura K. (2013) Winter precipitation isotope slopes of the contiguous USA and their relationship to the Pacific/North American (PNA) pattern. *Climate Dynamics*, 41, 403-420. doi:10.1007/s00382-012-1548-0.
61. Schneider-Mor A.\* and Bowen G. J. (2013) Coupled and decoupled responses of continental and marine organic-sedimentary systems through the Paleocene-Eocene thermal maximum, New Jersey margin, USA. *Paleoceanography*, 28. doi:10.1002/palo.20016.
60. VanDeVelde J. H.\* and Bowen G. J. (2013) Effects of chemical pretreatments on the hydrogen isotope composition of 2:1 clay minerals. *Rapid Communications in Mass Spectrometry*, 27, 1143-1148. doi:10.1002/rcm.6554.
59. VanDeVelde J. H.\*, Bowen G. J., Passey B. H. and Bowen B. B. (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. doi:10.1016/j.gca.2013.02.005.
58. Abels H. A., Clyde W. C., Gingerich P. D., Hilgen F. J., Fricke H. C., Bowen G. J. and Lourens L. J. (2012) Terrestrial carbon isotope excursions and biotic change during Paleocene hyperthermals. *Nature Geoscience*, 5, 326-329. doi:10.1038/ngeo1427.
57. Bataille C. P.\* and Bowen G. J. (2012) Mapping  $^{87}\text{Sr}/^{86}\text{Sr}$  variations in bedrock and water for large scale provenance studies. *Chemical Geology*, 304-305, 39-52. doi:10.1016/j.chemgeo.2012.01.028.
56. Bataille C. P.\*, Lafoon J. and Bowen G. J. (2012) Mapping multiple source effects on the strontium isotopic signatures of ecosystems from the circum-Caribbean region. *Ecosphere*, 3, 118. doi:10.1890/ES12-00155.1.
55. Bowen G. J., Kennedy C. D.\*, Henne P. D. and Zhang T. (2012) Footprint of recycled water subsidies downwind of Lake Michigan. *Ecosphere*, 3, 53. doi:10.1890/ES12-00062.1.
54. Bowen G. J., West J. B., Zhao L., Takahashi G., Miller C. C. and Zhang T. (2012) Cyberinfrastructure for isotope analysis and modeling. *Eos: Transactions of the American Geophysical Union*, 93, 185-187.
53. Buzon M. R., Conlee C. A., Simonetti A. and Bowen G. J. (2012) The consequences of Wari contact in the Nasca region during the Middle Horizon: Archaeological, skeletal, and isotopic evidence. *Journal of Archaeological Science*, 39, 2627-2636. doi:10.1016/j.jas.2012.04.003.
52. Kennedy C. D.\*, Bataille C. P.\*, Liu Z.\*, Ale S., VanDeVelde J.\*, Roswell C. R., Bowling L. C. and Bowen G. J. (2012) Dynamics of nitrate and chloride during storm events in agricultural catchments with different subsurface drainage intensity (Indiana, USA). *Journal of Hydrology*, 466-467, 1-10. doi:10.1016/j.hydrol.2012.05.002.
51. Podlesak D. W., Bowen G. J., O'Grady S., Cerling T. E. and Ehleringer J. R. (2012)  $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  of human body water: A GIS model to distinguish residents from nonresidents in the contiguous United States. *Isotopes in Environmental and Health Studies*, 48, 259-279. doi:10.1080/10256016.2012.644283.
50. Sachse D., Billault I., Bowen G. J., Chikaraishi Y., Dawson T., Feakins S. J., Freeman K. H., Magill C. R., McInerney F. A., van der Meer M. T. J., Polissar P., Robins R., Sachs J. P., Schmidt H. -L., Sessions A. L., White J. W. C., West J. B. and Kahmen A. (2012) Molecular paleohydrology: Interpreting the hydrogen-isotopic composition of lipid biomarkers from photosynthetic organisms. *Annual Review of Earth and Planetary Sciences*, 40, 221-249. doi:10.1146/annurev-earth-042711-105535.
49. Valenzuela L. O., Chesson L. A., Bowen G. J., Cerling T. E. and Ehleringer J. R. (2012) Dietary heterogeneity among western industrialized countries reflected in the stable isotope ratios of human hair. *PLoS ONE*, 7(3), e34234. doi:10.1371/journal.pone.0034234.

48. Bowen G. J., Kennedy C. D.\*, Liu Z.\* and Stalker J.\* (2011) Water balance model for mean annual hydrogen and oxygen isotope distributions in surface waters of the contiguous USA. *Journal of Geophysical Research*, 116, G04011. doi:10.1029/2010JG001581. (Highlighted in *Eos*)
47. Buzon M. R., Conlee C. A. and Bowen G. J. (2011) Refining oxygen isotope analysis in the Nasca region of Peru: An investigation of water sources and archaeological samples. *International Journal of Osteoarchaeology*, 21, 446-455. doi:10.1002/oa.1151.
46. Chesson L. A., Valenzuela L. O., Bowen G. J., Cerling T. E. and Ehleringer J. R. (2011) Consistent predictable patterns in the hydrogen and oxygen isotope ratios of animal proteins consumed by humans in the USA. *Rapid Communications in Mass Spectrometry*, 25, 3713-3722. doi:10.1002/rcm.5283.
45. Kennedy C. D.\*, Bowen G. J. and Ehleringer J. R. (2011) Temporal variation of oxygen isotope ratios ( $\delta^{18}\text{O}$ ) in drinking water: Implications for specifying location of origin with human scalp hair. *Forensic Science International*, 208, 156-166. doi:10.1016/j.forsciint.2010.11.021.
44. Lee H., Zhao L., Bowen G. J., Miller C. C., Kalangi A., Zhang T. and West J. B. (2011) Enabling online geospatial isotopic model development and analysis. *Proceedings of the 2011 TeraGrid Conference: Extreme Digital Discovery*, 1-8. doi:10.1145/2016741.2016783.
43. Liu Z.\*, Kennedy C. D.\* and Bowen G. J. (2011) Pacific/North American teleconnection controls on precipitation isotope ratios across the contiguous United States. *Earth and Planetary Science Letters*, 310, 319-326. doi:10.1016/j.epsl.2011.08.037.
42. Rodrigues C., Brunner M., Steiman S., Bowen G. J., Nogueira J. M. F., Gautz L., Prohaska T. and Máguas C. (2011) Isotopes as tracers of the Hawaiian coffee-producing regions. *Journal of Agricultural and Food Chemistry*, 59, 10239-10246. doi:10.1021/jf200788p.
41. Ting S., Wang Y. Q., Clyde W. C., Koch P. L., Tong Y., Meng J., Bowen G. J., Qian L. and Snell K. E. (2011) Asian Early Paleogene chronology and mammalian faunal turnover events. *Vertebrate Palasiatica*, 49, 1-28.
40. Wolf N., Bowen G. J. and Martinez del Rio C. (2011) The influence of drinking water on the  $\delta\text{D}$  and  $\delta^{18}\text{O}$  values of plasma, blood, and feather of house sparrow tissues. *Journal of Experimental Biology*, 214, 98-103. doi:10.1242/jeb.050211.
39. Bowen G. J. (2010) Isoscapes: Spatial pattern in isotopic biogeochemistry. *Annual Review of Earth and Planetary Sciences*, 38, 161-187. doi:10.1146/annurev-earth-040809-152429.
38. Bowen G. J. and Zachos J. C. (2010) Rapid carbon sequestration at the termination of the Paleocene-Eocene thermal maximum. *Nature Geoscience*, 3, 866-869. doi:10.1038/NGEO1014.
37. Buzon M. R. and Bowen G. J. (2010) Oxygen isotope analysis of residential mobility at the New Kingdom site of Tombos in Nubia. *Archaeometry*, 52, 855-868. doi:10.1111/j.1475-4754.2009.00503.x.
36. Chesson L. A., Bowen G. J. and Ehleringer J. R. (2010) Analysis of the hydrogen and oxygen stable isotope ratios of beverage waters without prior water extraction using wavelength-scanned cavity ring-down spectroscopy. *Rapid Communications in Mass Spectrometry*, 24, 3205-3213. doi: 10.1002/rcm.4759.
35. Clyde W. C., Ting S., Snell K. E., Bowen G. J., Tong Y., Koch P. L., Li Q. and Wang Y. (2010) New paleomagnetic and stable isotope results from the Nanxiong Basin, China; Implications for the K/T Boundary and the timing of Paleocene mammalian turnover. *Journal of Geology*, 118, 131-143. doi:10.1086/649893.
34. Liu Z.\*, Bowen G. J. and Welker J. M. (2010) Precipitation isotope gradients reflect atmospheric circulation over the conterminous United States. *Journal of Geophysical Research*, 115, D22120, doi:10.1029/2010JD014175.
33. Nielson K. E.\*, Bowen G. J. (2010) Hydrogen and oxygen in brine shrimp chitin reflect environmental water and dietary isotopic composition. *Geochimica et Cosmochimica Acta*, 74, 1812-1822. doi:10.1016/j.gca.2009.12.025.
32. Thompson A. H., Chesson L. A., Podlesak D. W., Bowen G. J., Cerling T. E. and Ehleringer J. R. (2010) Stable isotope analysis of modern human hair collected from Asia (China, India, Mongolia and Pakistan). *American Journal of Physical Anthropology*, 141, 440-451.
31. Bowen G. J., Ehleringer J. R., Chesson L. A., Thompson A. H., Podlesak D. W. and Cerling T. E. (2009) Dietary and physiological controls on the hydrogen and oxygen isotope ratios of hair from mid-20<sup>th</sup> century

- indigenous populations. *American Journal of Physical Anthropology*, 139, 494-504. doi:10.1002/ajpa.21008.
30. Bowen G. J., West J. B., Vaughn B. H., Dawson T. E., Ehleringer J. R., Fogel M. L., Hobson K. A., Hoogewerff J., Kendall C., Lai C.-T., Miller C. C., Noone D., Schwarcz H. and Still C. J. (2009) Isoscapes to address large-scale Earth Science challenges. *Eos: Transactions of the American Geophysical Union*, 90, 109-110.
  29. Bowen G. J. (2008) Spatial analysis of the intra-annual variation of precipitation isotope ratios and its climatological corollaries. *Journal of Geophysical Research - Atmospheres*, 113, D05113, doi:10.1029/2007JD009295.
  28. Bowen G. J. and Bowen B. B. (2008) Mechanisms of PETM global change constrained by a new record from central Utah. *Geology*, 36, 379-382.
  27. Bowen G. J., Daniels A. L. and Bowen B. B. (2008) Paleoenvironmental isotope geochemistry and paragenesis of lacustrine and palustrine carbonates, Flagstaff Formation, central Utah, USA. *Journal of Sedimentary Research*, 78, 162-174.
  26. Clyde W. C., Tong Y., Snell K. E., Bowen G. J., Ting S., Koch P. L., Li Q., Wang Y. and Meng J. (2008) An integrated stratigraphic record from the Paleocene of the Chijiang Basin, Jiangxi Province (China): Implications for mammalian turnover and Asian Block Rotations. *Earth and Planetary Science Letters*, 269, 553-563.
  25. Ehleringer J. R., Bowen G. J., Chesson L. A., West A. G., Podlesak D. and Cerling T. E. (2008) Hydrogen and oxygen isotope ratios in human hair are related to geography. *Proceedings of the National Academy of Sciences*, 105, 2788-2793.
  24. Ehleringer J. R., Cerling T. E., West J. B., Podlesak D. W., Chesson L. A. and Bowen G. J. (2008) Spatial considerations of stable isotope analysis in environmental forensics. *Issues in Environmental Science and Technology*, 26, 36-53.
  23. Bowen G. J., Ehleringer J. R., Chesson L. A., Stange E. and Cerling T. E. (2007) Stable isotope ratios of tap water in the contiguous USA. *Water Resources Research*, 43, W03419.
  22. Ting S.-Y., Meng J., Qian L., Wang Y.-Q., Tong Y.-S., Schiebout J. A., Koch P. L., Clyde W. C., Bowen G. J. (2007) *Ganungulatum xincunliense*, an artiodactyl-like mammal (Ungulata, Mammalia) from the Paleocene, Chijiang Basin, Jiangxi, China. *Vertebrata Palasiatica*, 45, 278-286.
  21. Bowen G. J., Bralower T. J., Delaney M. L., Dickens G. R., Kelly D. C., Koch P. L., Kump L. R., Meng J., Sloan L. C., Thomas E., Wing S. L. and Zachos J. C. (2006) Eocene hyperthermal event offers insight into greenhouse warming. *Eos: Transactions of the American Geophysical Union*, 87, 165 - 169.
  20. Fox-Dobbs K., Stidham T. A., Bowen G. J., Emslie S. D. and Koch P. L. (2006) Dietary controls on extinction versus survival among avian megafauna in the late Pleistocene. *Geology*, 34, 685 - 688.
  19. Norris D. R., Marra P. P., Bowen G. J., Ratcliffe L. M., Royale J. A. and Kyser T. K. (2006) Migratory connectivity of a widely distributed songbird, the American Redstart (*Setophaga ruticilla*). *Ornithological Monographs*, 61, 13-28.
  18. West J. B., Bowen G. J., Cerling T. E. and Ehleringer J. R. (2006) Stable isotopes as one of nature's ecological recorders. *Trends in Ecology & Evolution*, 21, 408-414, doi:10.1016/j.tree.2006.04.002.
  17. Bowen G. J., Chesson L., Nielson K., Cerling T. E. and Ehleringer J. R. (2005) Treatment methods for the determination of  $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  of hair keratin by continuous-flow isotope-ratio mass spectrometry. *Rapid Communications in Mass Spectrometry*, 19, 2371-2378, doi:10.1002/rcm.2069.
  16. Bowen G. J., Koch P. L., Meng J., Ye J. and Ting S. (2005) Stratigraphy and correlation of fossiliferous late Paleocene-early Eocene strata of the Erlian Basin, Inner Mongolia, China. *American Museum Novitates*, 3474, 1-26.
  15. Bowen G. J., Wassenaar L. I. and Hobson K. A. (2005) Global application of stable hydrogen and oxygen isotopes to wildlife forensics. *Oecologia*, 143, 337-348, doi:10.1007/s00442-004-1813-y.
  14. Bowen G. J., Winter D. A., Spero H. J., Zierenberg R. A., Cerling T. E. and Ehleringer J. R. (2005) Stable hydrogen and oxygen isotope ratios of bottled waters of the world. *Rapid Communications in Mass Spectrometry*, 19, 3442-3450, doi:10.1002/rcm.2216.

13. Bearhop S., Fiedler W., Furness R. W., Votier S. C., Waldron S., Newton J., Bowen G. J., Berthold P. and Farnsworth K. (2005) Assortative mating as a mechanism for rapid evolution of a migratory divide. *Science*, 310, 502-504, doi:10.1126/science.1115661.
12. Coe R. S., Stock G. M., Lyons J. J., Beitler B. and Bowen G. J. (2005) Yellowstone hotspot volcanism in California? A paleomagnetic test of the Lovejoy flood basalt hypothesis. *Geology*, 33, 697-700, doi:10.1130/G21733.1.
11. Dutton A., Wilkinson B. H., Welker J. M., Bowen G. J. and Lohmann K. C. (2005) Spatial distribution and seasonal variation in  $^{18}\text{O}/^{16}\text{O}$  of modern precipitation and river water across the conterminous United States. *Hydrological Processes*, 19, 4121-4146, doi:10.1002/hyp.5876.
10. Meng J., Wyss A. R., Hu Y., Wang Y., Bowen G. J. and Koch P. L. (2005) Glires (Mammalia) from the Late Paleocene Bayan Ulan Locality of Inner Mongolia. *American Museum Novitates*, 3473, 1-25.
9. Bowen G. J., Beerling D. J., Koch P. L., Zachos J. C. and Quattlebaum T. (2004) A humid climate state during the Paleocene-Eocene thermal maximum. *Nature*, 432, 495-499.
8. Bowen G. J. and Beerling D. J. (2004) An integrated model for soil organic carbon and  $\text{CO}_2$ : Implications for paleosol carbonate  $p\text{CO}_2$  paleobarometry. *Global Biogeochemical Cycles*, 18, GB1026, doi:10.1029/2003GB002117.
7. Hobson K. A., Bowen G. J., Wassenaar L. I., Ferrand Y. and Lormee H. (2004) Using stable hydrogen isotope measurements of feathers to infer geographical origins of migrating European birds. *Oecologia*, 141, 477-488.
6. Meng J., Bowen G. J., Koch P. L., Ting S., Li Q. and Jin X. (2004) *Gomphos elkema* from the Erlan Basin: Evidence for the Early Tertiary Bumbanian Land Mammal Age in Nei-Mongol, China. *American Museum Novitates*, 3425, 1-25.
5. Ting S., Wang Y., Schiebout J. A., Koch P. L., Clyde W. C., Bowen G. J. and Wang Y. (2004) New Early Eocene mammalian fossils from the Hengyang Basin, Hunan, China. *Bulletin of the Carnegie Museum of Natural History*, 36, 291-301.
4. Bowen G. J. and Revenaugh J. (2003) Interpolating the isotopic composition of modern meteoric precipitation. *Water Resources Research*, 39, 1299, doi:10.129/2003WR002086.
3. Bowen G. J. and Bloch J. I. (2002) Petrography and geochemistry of floodplain limestones from the Clarks Fork basin, Wyoming, U.S.A.: Carbonate deposition and fossil accumulation on a Paleocene-Eocene floodplain. *Journal of Sedimentary Research*, 72, 46-58.
2. Bowen G. J., Clyde W. C., Koch P. L., Ting S., Alroy J., Tsubamoto T., Wang Y. and Wang Y. (2002) Mammalian dispersal at the Paleocene/Eocene boundary. *Science*, 295, 2062-2065.
1. Bowen G. J. and Wilkinson B. (2002) Spatial distribution of  $\delta^{18}\text{O}$  in meteoric precipitation. *Geology*, 30, 315-318.

#### Peer-Reviewed Books and Book Chapters:

14. Good S. P.\*, Mallia D. V., Denis E. H., Freeman K. H., Feng X., Li S., Zegre N., Lin J. C. and Bowen G. J. (2014) High-density spatiotemporal monitoring of water transport in Hurricane Sandy using stable isotopes. In *Learning from the Impacts of Superstorm Sandy* (ed. J. B. Bennington and E. C. Farmer). Elsevier, pp. 41-55. Elsevier.
13. Chesson L. A., Tipple B. J., Howa J. D., Bowen G. J., Barnette J. E., Cerling T. E. and Ehleringer J. R. (2014) Stable isotopes in forensics applications. In *Treatise on Geochemistry* (ed. H. D. Holland and K. K. Turekian), pp. 285-317. Elsevier.
12. Bowen G. J. (2010) Statistical and geostatistical mapping of precipitation water isotope ratios. In *Isoscapes: Understanding Movement, Pattern and Process on Earth Through Isotope Mapping* (ed. J. B. West, G. J. Bowen, K. P. Tu and T. E. Dawson), pp. 139-160. Springer.
11. Ehleringer J. R., Thompson A. H., Podlesak D., Bowen G. J., Chesson L. A., Cerling T. E., Park T., Dostie P. and Schwarcz H. (2010) A framework for the incorporation of isotopes and isoscapes in geospatial forensic investigations. In *Isoscapes: Understanding Movement, Pattern and Process on Earth Through Isotope Mapping* (ed. J. B. West, G. J. Bowen, K. P. Tu and T. E. Dawson), pp. 357-388. Springer.



10. Gibson J. J., Fekete B. M. and Bowen G. J. (2010) Stable isotopes in large scale hydrological applications. In *Isoscapes: Understanding Movement, Pattern and Process on Earth Through Isotope Mapping* (ed. J. B. West, G. J. Bowen, K. P. Tu and T. E. Dawson), pp. 389-406. Springer.
9. Bowen G. J. and West J. B. (2008) Isotope landscapes for terrestrial migration research. In *Tracking Animal Migration with Stable Isotopes* (ed. K. A. Hobson and L. I Wassenaar), pp. 79-105. Elsevier Academic Press.
8. Bowen G. J., Ehleringer J. R. and Cerling T. E. (2007) Stable isotopes and human water resources: signals of change. In *Stable Isotopes as Indicators of Ecological Change* (ed. T. E. Dawson and R. Siegwolf), pp. 285-300. Elsevier Academic Press.
7. Cerling T. E., Bowen G. J., Ehleringer J. R. and Sponheimer M. (2007) The reaction progress variable and isotope turnover in biological systems. In *Stable Isotopes as Indicators of Ecological Change* (ed. T. Dawson and R. Siegwolf), pp. 163-172. Elsevier Academic Press.
6. Sluijs A., Bowen G. J., Brinkhuis H., Lourens L. J. and Thomas E. (2007) The Paleocene-Eocene Thermal Maximum super greenhouse: Biotic and geochemical signatures, age models and mechanisms of global change. In *Deep Time Perspectives on Climate Change* (ed. M. Williams, A. Haywood, J. Gregory and D. N. Schmidt), pp. 323-349. Geological Society of London, TMS Special Publication.
5. Bains S., Norris R. D., Corfield R. M., Bowen G. J., Gingerich P. D. and Koch P. L. (2003) Marine-terrestrial linkages at the Paleocene-Eocene boundary. In *Causes and Consequences of Globally Warm Climates in the Early Paleogene* (ed. S. L. Wing, P. D. Gingerich, B. Schmitz and E. Thomas), pp. 1-9. Geological Society of America.
4. Ting S., Bowen G. J., Koch P. L., Clyde W. C., Wang Y., Wang Y. and McKenna M. C. (2003) Biostratigraphic, chemostratigraphic, and magnetostratigraphic study across the Paleocene/Eocene boundary in the Hengyang Basin, Hunan, China. In *Causes and Consequences of Globally Warm Climates in the Early Paleogene* (ed. S. L. Wing, P. D. Gingerich, B. Schmitz and E. Thomas), pp. 521-535. Geological Society of America.
3. Wing S. L., Harrington G. J., Bowen G. J. and Koch P. L. (2003) Floral change during the Initial Eocene Thermal Maximum in the Powder River Basin, Wyoming. In *Causes and Consequences of Globally Warm Climates in the Early Paleogene* (ed. S. L. Wing, P. D. Gingerich, B. Schmitz and E. Thomas) pp. 425-440. Geological Society of America.
2. Bowen G. J., Koch P. K., Gingerich P. D., Norris R. D., Bains S. and Corfield R. M. (2001) Refined isotope stratigraphy across the continental Paleocene-Eocene boundary on Polecat Bench in the Northern Bighorn Basin. In *Paleocene-Eocene Stratigraphy and Biotic Change in the Bighorn and Clarks Fork Basins, Wyoming* (ed. P. D. Gingerich), pp. 73-88. University of Michigan Papers on Paleontology, 33.
1. Bloch J. I. and Bowen G. J. (2001) Paleocene-Eocene microvertebrates in freshwater limestones of the Willwood Formation, Clarks Fork basin, Wyoming. In *Eocene Biodiversity: Unusual Occurrences and Rarely Sampled Habitats* (ed. G. F. Gunnell), pp. 95-129. Kluwer Academic/Plenum Publishers.

#### **Non-Reviewed Papers, Chapters and Reports:**

9. Jones M. D., Dee S., Anderson L., Baker A., Bowen G. J. and Noone D. C. (2016) Water isotope systematics: Improving our paleoclimate interpretations. *Quaternary Science Reviews*, 131, 243-249. doi:10.1038/525043a.
8. Bowen G. J. (2015) The diversified economics of soil water. *Nature*, 525, 43-44. doi:10.1038/525043a.
7. Bowen G. J. (2011) A faster water cycle. *Science*, 332, 430-431. doi:10.1126/science.1205253.
6. Bowen G. J., West J. B. and Dawson T. E. (2010) Isoscapes in a rapidly changing and increasingly interconnected world. In *Isoscapes: Understanding Movement, Pattern and Process on Earth Through Isotope Mapping* (ed. J. B. West, G. J. Bowen, K. P. Tu and T. E. Dawson), pp. 425-432. Springer.
5. Votier S. C., Bowen G. J. and Newton J. (2009) Stable-hydrogen isotope analyses suggest natural vagrancy of Baikal Teal to Britain. *British Birds*, 102, 697-699.
4. Bowen G. J., West J. B. and Hoogewerff J. (2009) Isoscapes: Isotope mapping and its applications. *Journal of Geochemical Exploration*, 102, v-vii. doi:10.1016/j.gexplo.2009.05.001.

3. Kelly J. F., Bearhop S., Bowen G. J., Hobson K. A., Norris D. R., Wassenaar L. I., West J. B. and Wunder M. (2008) Future directions and challenges for using stable isotopes in advancing terrestrial animal migration research. In *Tracking Animal Migration with Stable Isotopes* (ed. K. A. Hobson and L. I. Wassenaar), pp. 129-139. Elsevier Academic Press.
2. Bowen G. J. (2007) Palaeoclimate – When the world turned cold (News and Views). *Nature*, 445, 607-608.
1. Tu K. P., Bowen G. J., Hemming D. H., Kahmen A., Knohl A., Lai C. T. and Werner C. (2007) Stable isotopes as indicators, tracers and recorders of ecological change: Synthesis and outlook. In *Stable Isotopes as Indicators of Ecological Change* (ed. T. E. Dawson and R. Siegwolf), pp. 399-405. Elsevier Academic Press.

#### **Invited Presentations:**

- ◆ *Asia Oceana Geoscience Society Annual Meeting* (2016)
- ◆ *Institute for Global Change Study, Tsinghua University, China* (2016)
- ◆ *Plenary – 24<sup>th</sup> American Quaternary Association Biennial Meeting* (2016)
- ◆ *Keynote – 10<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Tokyo, Japan* (2016)
- ◆ *American Geophysical Union Fall Meeting* (2015)
- ◆ *Goldschmidt Geochemistry Conference* (2015)
- ◆ *Utah Geological Association* (2015)
- ◆ *State Key Laboratory of Marine Geology, Tongji University, China* (2015)
- ◆ *Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China* (2015)
- ◆ *State Key Laboratory of Environment and Water Resources, Tianjin Normal University, China* (2015)
- ◆ *Geological Society of America National Meeting* (2015)
- ◆ *Distinguished Speaker Series, Departments of Biology and Geology, Idaho State Univ.* (2015)
- ◆ *American Indian Science and Engineering Society Regional Conference* (2015)
- ◆ *ASMS Sanibel Conference on Security and Forensic Applications of Mass Spectrometry, Clearwater Beach, Florida* (2015)
- ◆ *Keynote – Coming of Age? Stable Isotopes in Archaeology, Kiel, Germany* (2014)
- ◆ *Geological Society of America National Meeting* (2014)
- ◆ *Department of Botany and Wyoming EPSCoR Seminar, Univ. of Wyoming* (2014)
- ◆ *Earth Science Seminar, Utah Valley Univ.* (2014)
- ◆ *Kansas Geological Survey Stratigraphic Research Seminar* (2014)
- ◆ *Department of Geology Colloquium, Univ. of Kansas* (2014)
- ◆ *CUAHSI/USGS Cyberseminar Series, Laser Specs for Field Hydrology* (2014)
- ◆ *European Geophysical Union General Assembly* (2014)
- ◆ *Distinguished Lecture Series, Univ. of Utah Department of Geology & Geophysics* (2014)
- ◆ *Questar Energy Seminar, Univ. of Utah Department of Geology & Geophysics* (2014)
- ◆ *American Geophysical Union Fall Meeting* (2013)
- ◆ *Department of Earth and Planetary Sciences, Univ. of New Mexico* (2013)
- ◆ *1<sup>st</sup> International Workshop on Water Vapor Isotopes, IPSL, France* (2013)
- ◆ *Keynote – 5<sup>th</sup> Forensic Isotope Ratio Mass Spectrometry Network Conference, Montreal, Canada* (2013)
- ◆ *COST-SIBAE Meeting on Challenges in the Applications of Stable Isotopes Across Disciplines and Scales, Wroclaw, Poland* (2013)
- ◆ *International Workshop on Aquatic Ecology and Restoration, Shenyang Agricultural Univ., China* (2013)
- ◆ *Chinese-American Workshop on Global Changes and Management of Lakes and Watersheds, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, Nanjing, China* (2013)
- ◆ *Department of Chemistry and Biochemistry Graduate Seminar, Florida International Univ.* (2013)
- ◆ *Geography Department Colloquium, Univ. of Utah* (2013)
- ◆ *Mathematical Biology Seminar, Univ. of Utah* (2013)

- ◆ *Climate Change in the Mediterranean Region*, Univ. of Seville, Spain (2012)
- ◆ *American Geophysical Union Fall Meeting* (2012)
- ◆ Keynote – *International Geological Congress*, Brisbane, Australia (2012)
- ◆ *Frontiers in Geoscience*, Los Alamos National Lab (2012)
- ◆ *Geology & Geophysics Seminar*, Yale University (2012)
- ◆ *American Geophysical Union Fall Meeting* (2011)
- ◆ Keynote – *Goldschmidt Geochemistry Conference* (2011)
- ◆ *Gordon Conference on Catchment Hydrology* (2011)
- ◆ Southern Illinois University (2011)
- ◆ *The Roles of Stable Isotopes in Water Cycle Research* (2011)
- ◆ Texas A&M University (2011)
- ◆ *Goldschmidt Geochemistry Conference* (2010)
- ◆ Univ. Chicago (2010)
- ◆ *Distinguished Lecture Series*, Univ. of Utah Department of Geology & Geophysics (2010)
- ◆ *American Geophysical Union Fall Meeting* (2009)
- ◆ *Climatic and Biotic Events of the Paleogene, New Zealand, 2009*
- ◆ Northwestern Univ. (2009)
- ◆ Ohio State Univ. (2009)
- ◆ Southern Methodist Univ. (2009)
- ◆ Univ. of Tsukuba (Japan) – Terrestrial Environmental Research Center (2009)
- ◆ Indiana State Univ. (2008)
- ◆ Keynote - *6<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies* (2008)
- ◆ Western Michigan Univ. – *Joint Biology and Geosciences Dept. Seminar* (2008)
- ◆ Indiana Univ./Purdue Univ. Indianapolis (2007)
- ◆ Univ. Illinois - *Geology Colloquium* (2006)
- ◆ Univ. Minnesota - *Quaternary Paleoecology Seminar* (2006)
- ◆ Univ. Lisbon - Institute of Scientific and Applied Technology (2006)
- ◆ *Stable Isotopes as Recorders of Ecological Change: A BASIN Workshop, Tomar, Portugal* (2006)
- ◆ Univ. Utrecht - *Darwin Center Lecture* (2006)
- ◆ *Geological Society of America National Meeting* (2005)
- ◆ *Earth Systems Processes 2* (2005)
- ◆ Univ. of Utah - *Guy F. Atkinson Distinguished Lecture Series* (2005)
- ◆ Univ. of Wisconsin - *Lewis Weeks Lecture Series* (2005)

**Volunteered Presentations:**

- ◆ *IAEA International Symposium on Isotope Hydrology* (2015)
- ◆ *Geological Society of America National Meeting* (2013, 2009, 2008, 2007, 2004, 2002, 2000, 1999)
- ◆ *European Geophysical Union General Assembly* (2013, 2012)
- ◆ *8<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies* (2012)
- ◆ *American Geophysical Union Fall Meeting* (2011, 2010, 2008, 2007, 2006, 2004, 2003, 2002, 2001)
- ◆ *British Ecological Society Annual Meeting* (2010)
- ◆ *Forensic Isotope Ratio Mass Spectrometry Network Conference* (2010, 2007)
- ◆ Texas A&M University (2010)
- ◆ University of East Anglia (2010)
- ◆ Purdue University - *Forestry and Natural Resources Dept. Seminar* (2009)
- ◆ Earlham College (2006)
- ◆ Univ. Newcastle - College of Engineering and Geoscience (2006)

- ◆ *5<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies* (2006)
- ◆ Brown Univ. (2005)
- ◆ Purdue Univ. (2005)
- ◆ Univ. of Wyoming (2005)
- ◆ *4<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies* (2004)
- ◆ *Society of Vertebrate Paleontology Annual Meeting* (2004, 2003)
- ◆ Ohio State Univ. (2004)
- ◆ Rice Univ. (2004)
- ◆ Univ. Chicago (2004)
- ◆ Univ. New Hampshire (2004)
- ◆ *IUGS/ICS Symposium on the Paleogene* (2003)
- ◆ *International Conference on the Climate and Biota of the Early Paleogene* (2001)

**Courses Taught (enrollment):**

Summer 2016	<b>GEO 7920, Isotopes is Spatial Ecology and Biogeochemistry;</b> Univ. Utah (16)
Spring 2016	<b>GEO 1000, Natural Disasters;</b> Univ. Utah (63)
Fall 2015	<b>GEO 6920, Isotope Hydrology;</b> Univ. Utah (7)
Summer 2015	<b>GEO 7920, Isotopes is Spatial Ecology and Biogeochemistry;</b> Univ. Utah (23)
Spring 2015	<b>GEO 6680, The Carbon Cycle;</b> Univ. Utah (5)
Fall 2014	<b>GEO 6675, Paleoclimate Reconstruction;</b> Univ. Utah (11)
Summer 2014	<b>GEO 7920, Isotopes is Spatial Ecology and Biogeochemistry;</b> Univ. Utah (23)
Spring 2014	<b>GEO 6920, The Carbon Cycle;</b> Univ. Utah (9)
Fall 2013	<b>GEO 6920, Isotope Hydrology;</b> Univ. Utah (11)
Summer 2013	<b>GEO 7920, Isotopes is Spatial Ecology and Biogeochemistry;</b> Univ. Utah (26)
Spring 2013	<b>GEO 6920, Paleoclimate Reconstruction;</b> Univ. Utah (19)
Spring 2012	<b>EAS 106, Earth Science in the Cinema;</b> Purdue Univ. (153)
Fall 2011	<b>EAS 106, Earth Sciences in the Cinema;</b> Purdue Univ. (144)
Fall 2011	<b>EAS 591, Isotope Hydrology;</b> Purdue Univ. (11)
Fall 2011	<b>EAS 591, Water and Climate;</b> Purdue Univ. (20)
Spring 2011	<b>EAS 106, Earth Sciences in the Cinema;</b> Purdue Univ. (150)
Spring 2011	<b>EAS 118, Introduction to Earth Science;</b> Purdue Univ. (16)
Fall 2010	<b>EAS 591, Paleoclimate Reconstruction;</b> Purdue Univ. (7)
Spring 2009	<b>EAS 106, Earth Sciences in the Cinema;</b> Purdue Univ. (150)
Spring 2009	<b>EAS 118, Introduction to Earth Science;</b> Purdue Univ. (18)
Fall 2009	<b>EAS 106, Earth Sciences in the Cinema;</b> Purdue Univ. (150)
Fall 2009	<b>EAS 591, Isotope Hydrology;</b> Purdue Univ. (3)
Spring 2009	<b>EAS 191, Introduction to Earth Science;</b> Purdue Univ. (24)
Spring 2008	<b>EAS 191, Introduction to Earth Science;</b> Purdue Univ. (12)
Fall 2007	<b>EAS 591, Topics in Paleoclimatology;</b> Purdue Univ. (7)
Spring 2007	<b>EAS 191, Introduction to Earth Science;</b> Purdue Univ. (11)
Spring 2006	<b>EAS 390, Geologic Field Methods;</b> Purdue Univ. (7)
Fall 2005	<b>BIO 6921, Isotopics;</b> Univ. Utah (6)

**Postdoctoral Researchers Advised:**

Richard Fiorella (2016 – present)  
Rose Smith (2016 – present)  
Erik Oerter (2015 – present)  
Hannah Vander Zanden (2013 – 2016; currently Postdoctoral Fellow, USGS)

Samantha Weintraub (2014 – 2016; currently Staff Biogeochemist, National Ecological Observatory Network)  
Stephen Good (2013 – 2015; currently Assistant Professor of Biological and Ecological Engineering, Oregon State Univ.)

Jeremy Stalker (2010 – 2011; currently Assistant Professor of Marine Sciences, Jacksonville Univ.)

Casey Kennedy (2008 – 2011; currently Research Hydrologist, USDA)

Zhongfang Liu (2009 – 2011; currently Assistant Professor, Tongji Univ., Shanghai)

Aya Schneider-Mor (2007 – 2009; currently research scientist, Geological Survey of Israel)

**Graduate Students Advised:**

Brenden Fischer-Femal (Ph.D., current)

Yusuf Jameel (Ph.D., current)

Annie Putman (Ph.D., current)

Crystal Tulley-Cordova (Ph.D., current)

Dylana Watford (M.S., 2015)

Clement Bataille (Ph.D., UU, 2014; currently postdoc, Univ. North Carolina)

Bianca Maibauer (M.S., UU, 2013; currently Chevron)

Justin VanDeVelde (Ph.D., PU, 2012; currently postdoc, Univ. of Plymouth)

Kristine Nielson (Ph.D.)

**Graduate Committee Service:**

Brendon Quirk (Ph.D., current)

Joao Luna Gonzalez (Ph.D., current)

Sarah Stein (Ph.D., current)

Carolina Gomez Navarro (Ph.D., current)

Glen Mackey (Ph.D., current)

Christie Mancuso (Ph.D., current)

Stewart Gubler (M.S., 2016)

Amanda Johnson (MSSST, 2014)

Crystal King (MSSST, 2014)

Aaron Goldner (Ph.D., 2013)

Glynis Jehle (M.S., 2013)

Yueyang Jiang (Ph.D., 2012)

Stacy Story (Ph.D., 2012)

Zhiwei Zhang (M.S., 2011)

David Maase (M.S., 2010)

**Undergraduate and High School Employees and Mentees:**

Griffin Siebert (UU, 2016 – present)

Savahna Cunningham (UU, 2015 – 2016)

Christine Woltz (UU, 2015 – 2016)

Alex Lowe (UU, 2012 – 2015)

Amy Steimke (UU, 2012 – 2014)

Stephen Ruegg (UU, 2012 – 2014)

Juliana Newman (Jefferson High School, 2011 – 2012)

Vishnu Srinivasaraghavan (PU, 2010 – 2012)

Derek Bessler (PU, 2007 – 2010)

Cheyne Gevard (PU, 2009)

Shawn Dedeker (PU, 2008 – 2009)

Ashley Sankari (Jefferson High School, 2007 – 2009)

Jesse Greene (PU, 2006 – 2008)  
Ellen Pittsford (PU, 2006 – 2007)  
Andy Daniels (UCSC, 2003 – 2004)

### Visiting Scientists Hosted

09/15	Marco Ciolfi (Research Scientist, CNR-IBAF)
08/15	Paul Szejner (Ph.D. candidate, Univ. of Arizona)
08/13, 10/14	Sarah Stein (Ph.D. candidate, Purdue Univ.)
07/11	Christophe Sturm (Professor, Univ. of Stockholm)
06/10	Brigitte Berquist (National Geospatial Intelligence Agency)
04/10	Rob Posey (Ph.D. candidate, Univ. of East Anglia)
09/08 – 05/09	Nathan English (Ph.D. candidate, Univ. of Arizona)

### Professional Affiliations:

- ◆ American Geophysical Union (Fellow)
- ◆ Association for Women in the Geosciences
- ◆ Geological Society of America

### Media/Science News Coverage:

- ◆ Science paper on global water balance reported in several online and radio sources (<http://bit.ly/1Ej3Ag1>) (2015).
- ◆ Work on isotopic fingerprint of water derived from fossil fuel combustion featured in online science news services and in local print, radio, and television reports (<http://bit.ly/1wHzcIF>) (2015).
- ◆ Paper documenting pattern and pace of PETM carbon release highlighted in ~50 news reports, including pieces in *Science Magazine*, *nbcnews.com*, the *International Business Times*, *Science Daily*, *Nature World News*, and the NSF homepage (2014).
- ◆ Research on Holocene atmospheric circulation and North American winter weather featured on regional and national media outlets including *The Atlantic*, *Climate Central*, *Nature World News*, *Science Daily*, and feature story on KCPW (<http://bit.ly/1r19Fnc>) (2014).
- ◆ Crowd-sourced citizen science project to sample rainwater from Superstorm Sandy featured widely in blog and online news reports (2012-2013).
- ◆ Research on carbon cycle feedbacks during the PETM was featured in ~12 national and international news sources (2011).
- ◆ Research on human hair isotope ratios as a marker of geographic origin was featured on National Public Radio and in over 80 online and print news sources (2008).
- ◆ Research on geospatial stable isotope ratio patterns was featured in news articles in *Nature* and *Conservation in Practice* (both 2006).
- ◆ Project on clays and the Paleocene/Eocene boundary carbon cycle was highlighted in a news article for *Science* (2005).
- ◆ Work on mammal migration at the Paleocene/Eocene boundary was featured on the Discovery Channel Canada (TV), in a *Science* magazine News & Views article (print), in news pieces carried by *Newsday*, the *Seattle Times*, *San Francisco Chronicle*, *Calgary Herald*, *Toronto Globe and Mail*, and *Science News Magazine* (all print), and reports on *Scientific American Online* and *Bio.com* (web; all 2002).

### Community Leadership:

- ◆ Advisory Board, *American Chemical Society-Petroleum Research Fund* (2016 – present)
- ◆ Associate Editor, *Paleoceanography* (2016 – present)

- ◆ Developed and coordinated annual, 2-week, multi-institutional, multi-instructor graduate short course Isotopes in Spatial Ecology and Biogeochemistry (2013 – present)
- ◆ Member, *NEON Biogeochemistry Technical Working Group* (2012 – present)
- ◆ Associate Editor, *Methods in Ecology and Evolution* (2009 – 2013)
- ◆ Membership representative, *DOSECC* (2010 – 2012)
- ◆ Associate Editor, *Journal of Geochemical Exploration* (2007 – 2010)
- ◆ Executive Committee, *Biogeosphere-Atmosphere Stable Isotope Network* (2006 - 2011)
- ◆ Meeting organizer:
  - Co-organizer and facilitator of *NEON Isotope Workshop* (January 2014, Boulder, CO)
  - Organizing committee for *3<sup>rd</sup> Macrosystems Biology PI Meeting* (June 2014, Washington DC)
  - Organizing committee for *1<sup>st</sup> Macrosystems Biology PI Meeting* (March 2012, Boulder, CO)
  - Lead organizer of *Isoscapes2011* (<http://isoscapes2011.org>, 60 U.S. and international participants)
  - Lead organizer of *Isoscapes2008: Isotope Mapping and its Applications* (<http://isoscapes2008.wordpress.com/>, 125 U.S. and international participants)
- ◆ Session convener, *American Geophysical Union Fall Meeting* (2012, 2008, 2006)
- ◆ Developed and maintain web site (<http://www.waterisotopes.org>) providing scientific and educational content on stable isotope ratios of water, serving >5,000 unique visitors/year.
- ◆ Led development of [isomap.org](http://isomap.org) (<http://isomap.org>), a community cyber-GIS resource for mapping, analyzing, and modeling spatiotemporal environmental isotope data, currently supporting >650 registered users.

#### **Institutional Leadership:**

- ◆ Steering Committee, *SIRFER Lab* (2013 – present)
- ◆ Executive Board, *Purdue Climate Change Research Center* (2010 – 2012)
- ◆ Director, *Purdue Stable Isotope Recharge Center* (2008 – 2012)
- ◆ Departmental service
  - Chair, graduate affairs committee, *Univ. Utah G&G Department* (2013 – present)
  - Executive committee, *Univ. Utah G&G Department* (2013 – present)
  - Space committee, *Univ. Utah G&G Department* (2012 – 2013)
  - Graduate affairs committee, *Univ. Utah G&G Department* (2012 – 2013)
  - Chair, graduate committee, *Purdue EAS Department* (2011 – 2012)
  - Executive committee, *Purdue EAS Department* (2011 – 2012)
  - Graduate committee, *Purdue EAS Department* (2010 – 2012)
  - Field committee, *Purdue EAS Department* (2006 – 2012)
  - Seminar committee, *Purdue EAS Department* (2006 – 2011)
- ◆ University service
  - Search committee, Vice President for Research, *Univ. Utah* (2015 – 2016)
  - Search committee, Society, Water and Climate faculty cluster hire, *Univ. Utah* (2014 – 2016)
  - Chair, distinguished lecture series committee, *Univ. Utah College of Mines and Earth Science* (2012 – 2013)

#### **Professional Service:**

- ◆ Manuscript reviews:
  - American Journal of Physical Anthropology* (2009)
  - American Journal of Science* (2013)
  - Analytical Chemistry* (2007)
  - Aquatic Geochemistry* (2006)
  - Arctic and Alpine Research* (2006)
  - BioAnalysis* (2013)

*Canadian Journal of Earth Sciences* (2006)  
*Climate of the Past Discussions* (2011, 2010)  
*Diversity and Distributions* (2006)  
*Earth and Planetary Science Letters* (2015, 2014, 2011, 2010, 2008, 2006, 2005, 2003)  
*Ecology* (2009)  
*Ecosphere* (2012)  
*Elsvier Books* (2006)  
*Environmental Software* (2012)  
*Food Chemistry* (2008)  
*Geochemistry, Geophysics, Geosystems* (2012)  
*Geochimica et Cosmochimica Acta* (2015, 2013, 2012, 2010, 2005, 2004)  
*Geological Society of America Books* (2005)  
*Geology* (2014, 2005 – 2012, inclusive)  
*Geophysical Research Letters* (2015, 2009, 2007)  
*Global and Planetary Change* (2014, 2009)  
*Global Biogeochemical Cycles* (2007, 2005, 2004)  
*Global Change Biology* (2009)  
*Hydrology and Earth System Sciences* (2015)  
*Integrated Ocean Drilling Program* (2006)  
*Isotopes in Environmental and Health Sciences* (2015)  
*Journal of Archeological Sciences* (2008)  
*Journal of Forensic Science* (2015)  
*Journal of Geochemical Exploration* (2008, 2007)  
*Journal of Geology* (2010, 2003)  
*Journal of Geophysical Research* (2013, 2010, 2008, 2007)  
*Journal of Mammology* (2011)  
*Journal of Paleolimnology* (2009)  
*Journal of Sedimentary Research* (2014, 2013, 2010, 2009)  
*Journal of the Geological Society, London* (2008)  
*Limnology and Oceanography* (2012)  
*Mineralogical Society of America Books* (2007)  
*Nature* (2015, 2014, 2012, 2008, 2007, 2006, 2005, 2004)  
*Nature Geoscience* (2014)  
*Oecologia* (2015, 2008, 2005, 2004)  
*Palaeogeography, Palaeoclimatology, Palaeoecology* (2015, 2013, 2006)  
*Palaaios* (2010)  
*Paleobiology* (2011, 2006)  
*Paleoceanography* (2013, 2011, 2007)  
*Philosophical Transactions of the Royal Society* (2007)  
*PLoS ONE* (2015, 2012, 2011)  
*Proceedings of the National Academy of Sciences* (2015, 2010, 2009)  
*Quaternary Science Reviews* (2009)  
*Rapid Communications in Mass Spectrometry* (2013, 2011, 2009, 2007, 2006)  
*Science* (2011, 2010, 2009)  
*Science Advances* (2015)  
*Science of the Total Environment* (2015)  
*The Auk* (2006, 2005)  
*The Condor* (2006)  
*Trends in Ecology and Evolution* (2005)  
*Water Management* (2013)  
*Water Resources Research* (2010)



- ◆ Proposal reviews:
  - American Chemical Society-Petroleum Research Fund (2013, 2008, 2007)
  - Kansas EPSCoR (2014)
  - Murdock Trust (2010)
  - Netherlands Organization for Scientific Research (2006)
  - Swiss National Science Foundation (2009)
  - Univ. of Alaska Center for Global Change (2010)
  - U.S. National Science Foundation (2004 – 2016, inclusive)
  - U.S. Civilian Research and Development Foundation (2008)
  - U.S. Department of Agriculture (2010, 2008)
- ◆ Panel service:
  - National Science Foundation (2016, 2014, 2013, 2012, 2010)
- ◆ Lecturer:
  - Stable Isotopes in Ecology and Environmental Science* (Univ. Seville; 2015, 2014)
  - Urbino Summer School in Paleoclimatology* (Univ. Urbino; 2016, 2014, 2012, 2011, 2008, 2006)
  - Short course on *Stable Isotopes in Ecology* (Univ. of Utah; 2006 – 2012, inclusive)
  - Short course on *Greenhouse Climate and Carbon Cycle Dynamics: Lessons from the Early Cenozoic* (Univ. of Bremen, 2004)
- ◆ Invited workshop participant:
  - AIBS Workshop: Complex Data Integration* (Arlington, VA, 2015)
  - ICDP Workshop: Coring North Sea Cenozoic* (Utrecht, 2015)
  - U.S. Kavli Frontiers of Science* (Irvine, CA, 2014)
  - ICDP Workshop: Tanzania Onshore Paleogene Integrated Coring* (Dar es Salaam, 2014)
  - IAEA CRP Workshop on Integrated Analytical Techniques for Food Forensics and Contaminant Control* (IAEA, 2013)
  - EarthCube Paleogeoscience User Group Workshop* (Univ. Minnesota, 2013)
  - EarthCube Sedimentary Geology User Group Workshop* (Univ. Utah, 2013)
  - Integrated Analytical Techniques for Food Forensics and Contaminant Control* (IAEA, 2012)
  - Use of Stable Isotopes and DNA Barcoding in Tracing Migratory Pathways of Wild Birds, Potential Carriers of Highly Pathogenic Avian Influenza Virus* (IAEA, 2011)
  - IAEA Technical Meeting of GNIP: Interpolation Methods of Spatial Isotope Data from Global Monitoring Data Sets* (2008)
  - Stable Isotopes in EPA Aquatic Surveys* (2008)
  - NRC Workshop on the Importance of Deep Time Geologic Records for Understanding Climate Change Impacts* (2008)
  - Bighorn Basin Coring Project* (2007)
  - NCAR Workshop on PETM Data-Model Integration* (2007)