

## Gabriel J. Bowen

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Earth and Atmospheric Sciences  
550 Stadium Mall Dr.  
Purdue University  
West Lafayette, IN 47907  
(765)496-9344  
[gabe@purdue.edu](mailto:gabe@purdue.edu)

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### 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:

- 08/10 – present **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 (lead proposer unless indicated, total = \$3.04 million):

- 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 – 06/11 **Hydrological Controls on Nitrogen Dynamics in Artificially Drained Agricultural Watersheds**; \$75,000; Showalter Research Trust.
- 02/10 – 01/11 **Constructing the Nearshore Lake Michigan Food Web Using Multiple Trophic Indicators**; \$67,049 to Purdue Univ.; Great Lakes Seagrant; Co-PI w/ Tomas Höök, Purdue.
- 08/09 – 07/12 **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 – 06/11 **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 – 07/11 **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:**

5/07, 12/07, 5/08, 5/09

12/09, 12/10

06/00

10/99

9/99

9/99

4/99

**Teaching Honor Roll**, Earth and Atmospheric Sciences, Purdue University  
**Graduate Research Fellowship**, National Science Foundation  
**Case Award for Attainment in Research**, University of Michigan  
**Regent's Fellowship**, University of California, Santa Cruz  
**Educational Advancement Scholarship**, Conoco, Inc.  
**Highest Honors in Geological Sciences**, University of Michigan

**In Press and In Review (\*student author or postdoc):**

**Bowen G. J.**, Kennedy C. D.\*, Liu Z.\* and Stalker J.\* (in review) Runoff-residual model for surface water isotope distributions in the contiguous USA. *Journal of Geophysical Research*.

Liu Z.\*, Kennedy C. D.\* and **Bowen G. J.** (in review) Pacific/North American teleconnection controls on precipitation isotope ratios across the contiguous United States. *Earth and Planetary Science Letters*.

Valenzuela L. O., Chesson L. A., **Bowen G. J.**, Cerling T. E., Podlesak D. W., Thompson A. H. and Ehleringer J. R. (in review) Dietary influences on the isotopic composition of modern human hair from Europe. *American Journal of Physical Anthropology*.

Buzon M. R., Conlee C. A. and **Bowen G. J.** (in press) Refining oxygen isotope analysis in the Nasca region of Peru: An investigation of water sources and archaeological samples. *International Journal of Osteoarchaeology*.

**Journal Publications:**

54. 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.

53. 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.

52. 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.

51. **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.
50. **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.
49. 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.
48. 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.
47. 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.
46. 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.
45. 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.
44. 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.
43. **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.
42. **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.
41. **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.
40. **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.
39. **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.
38. 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.
37. 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.
36. 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.
35. **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.

34. 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.
33. **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.
32. 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.
31. 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.
30. 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.
29. **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.
28. **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.
27. **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.
26. **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.
25. 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.
24. 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.
23. 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.
22. 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.
21. **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.
20. **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.
19. 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.
18. Meng J., **Bowen G. J.**, Koch P. L., Ting S., Li Q. and Jin X. (2004) *Gomphos elkema* from the Erlian Basin: Evidence for the Early Tertiary Bumbanian Land Mammal Age in Nei-Mongol, China. *American Museum Novitates*, 3425, 1-25.
17. 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.
16. **Bowen G. J.** and Revenaugh J. (2003) Interpolating the isotopic composition of modern meteoric precipitation. *Water Resources Research*, 39, 1299, doi:10.129/2003WR002086.

15. **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.
14. **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.
13. **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:

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:

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:

- ◆ *Gordon Conference on Catchment Hydrology* (2011)
- ◆ *The Roles of Stable Isotopes in Water Cycle Research* (2011)
- ◆ Texas A&M University (2011)
- ◆ Goldschmidt (2010)
- ◆ Univ. Chicago (2010)
- ◆ Univ. of Utah - Distinguished Lecture Series (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 lecture - 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 Paleocology 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:**

- ◆ *American Geophysical Union Fall Meeting* (2010, 2008, 2007, 2006, 2004, 2003, 2002, 2001)
- ◆ British Ecological Society Annual Meeting (2010)
- ◆ Forensic Isotope Ratio Mass Spectrometry Network (2010, 2007)
- ◆ Texas A&M University (2010)
- ◆ University of East Anglia (2010)
- ◆ Purdue University - Forestry and Natural Resources Dept. Seminar (2009)
- ◆ *Geological Society of America National Meeting* (2009, 2008, 2007, 2004, 2002, 2000, 1999)
- ◆ 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):**

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 591B, 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 591B, Isotope Hydrology;</b> Purdue Univ. (3)
Spring 2009	<b>EAS 191R, Introduction to Earth Science;</b> Purdue Univ. (24)
Spring 2008	<b>EAS 191R, Introduction to Earth Science;</b> Purdue Univ. (12)
Fall 2007	<b>EAS 591B, Topics in Paleoclimatology;</b> Purdue Univ. (7)
Spring 2007	<b>EAS 191R, 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:**

Jeremy Stalker (2010 – present)  
Casey Kennedy (2008 – present)  
Zhongfang Liu (2009 – 2011; currently at Tianjin Normal University)  
Aya Schneider-Mor (2007 – 2009; currently postdoc at Stanford)

**Graduate Students Advised:**

Clement Bataille (Ph.D., current)

Justin VanDeVelde (Ph.D., current)  
Kristine Nielson (Ph.D., current)  
Bianca Meibauer (M.S., current)

**Graduate Committee Service:**

Thomas Lovell (Ph.D., current)  
Jonathan Buzan (Ph.D., current)  
Yueyang Jiang (Ph.D., current)  
Stacey Story (Ph.D., current)  
Aaron Goldner (Ph.D., current)  
Zhiwei Zhang (M.S., 2011)  
David Maase (M.S., 2010)

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

Vishnu Srinivasaraghavan (PU, 2010 – present)  
Derek Bessler (PU, 2007 – 2010)  
Cheyne Gevard (PU, 2009)  
Shawn Dedeker (PU, 2008 – 2009)  
Ashley Sankari (Harrison High School, 2007 – 2009)  
Jesse Greene (PU, 2006 – 2008)  
Ellen Pittsford (PU, 2006 – 2007)  
Andy Daniels (UCSC, 2003 – 2004)

**Visiting Scientists Hosted**

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
- ◆ Association for Women in the Geosciences
- ◆ Geological Society of America
- ◆ Society of Economic Paleontologists and Mineralogists
- ◆ Society of Vertebrate Paleontologists

**Media/Science News Coverage:**

- ◆ 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).



**Professional Leadership:**

- ◆ Committee membership
  - Executive committee, *Purdue EAS department* (2011 – present)
  - Graduate committee, *Purdue EAS department* (2010 – present)
  - Field committee, *Purdue EAS department* (2006 – present)
  - Seminar committee, *Purdue EAS department* (2006 – present)
- ◆ Membership representative, *DOSECC* (2010 – present)
- ◆ Executive Board, *Purdue Climate Change Research Center* (2010 – present)
- ◆ Associate Editor, *Methods in Ecology and Evolution* (2009 – present)
- ◆ Associate Editor, *Journal of Geochemical Exploration* (2007 – 2010)
- ◆ Executive Committee, *Biogeosphere-Atmosphere Stable Isotope Network* (2006 - present)
- ◆ Lead organizer of Isoscapes2008: Isotope Mapping and its Applications (<http://isoscapes2008.org>, 125 U.S. and international participants)
- ◆ Session convener, *American Geophysical Union Fall Meeting* (2008, 2006)
- ◆ Workshop participant:
  - 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)

**Professional Service:**

- ◆ Manuscript reviews:
  - American Journal of Physical Anthropology* (2009)
  - Analytical Chemistry* (2007)
  - Aquatic Geochemistry* (2006)
  - Arctic and Alpine Research* (2006)
  - Canadian Journal of Earth Sciences* (2006)
  - Climate of the Past Discussions*(2010)
  - Diversity and Distributions* (2006)
  - Earth and Planetary Science Letters* (2010, 2008, 2006, 2005, 2003)
  - Ecology* (2009)
  - Elsvier Books* (2006)
  - Food Chemistry* (2008)
  - Geochimica et Cosmochimica Acta* (2010, 2005, 2004)
  - Geological Society of America Books* (2005)
  - Geology* (2010, 2009, 2008, 2007, 2006, 2005)
  - Geophysical Research Letters* (2009, 2007)
  - Global and Planetary Change* (2009)
  - Global Biogeochemical Cycles* (2007, 2005, 2004)
  - Global Change Biology* (2009)
  - Integrated Ocean Drilling Program* (2006)
  - Journal of Archeological Sciences* (2008)
  - Journal of Geochemical Exploration* (2008, 2007)
  - Journal of Geology* (2010, 2003)
  - Journal of Geophysical Research* (2010, 2008, 2007)
  - Journal of Paleolimnology* (2009)

*Journal of Sedimentary Research* (2010, 2009)  
*Journal of the Geological Society, London* (2008)  
*Mineralogical Society of America Books* (2007)  
*Nature* (2008, 2007, 2006, 2005, 2004)  
*Oecologia* (2008, 2005, 2004)  
*Palaeogeography, Palaeoclimatology, Palaeoecology* (2006)  
*Palaios* (2010)  
*Paleobiology* (2006)  
*Paleoceanography* (2007)  
*Philosophical Transactions of the Royal Society* (2007)  
*Proceedings of the National Academy of Sciences* (2010, 2009)  
*Quaternary Science Reviews* (2009)  
*Rapid Communications in Mass Spectrometry* (2009, 2007, 2006)  
*Science* (2011, 2010, 2009)  
*The Auk* (2006, 2005)  
*The Condor* (2006)  
*Trends in Ecology and Evolution* (2005)  
*Water Resources Research* (2010)

◆ Proposal reviews:

American Chemical Society-Petroleum Research Fund (2008, 2007)  
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 (2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004)  
U.S. Civilian Research and Development Foundation (2008)  
U.S. Department of Agriculture (2010, 2008)

◆ Panel service:

National Science Foundation (2010)

◆ Lecturer:

Short course on *Stable Isotopes in Ecology* (Univ. of Utah, 2010, 2009, 2008, 2007, 2006)  
*Urbino Summer School in Paleoclimatology* (Univ. Urbino, 2008, 2006)  
Short course on *Greenhouse Climate and Carbon Cycle Dynamics: Lessons from the Early Cenozoic*  
(Univ. of Bremen, 2004)

◆ 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.