

Linda Christine Kah

University of Tennessee

Updated August 2013

1. Research Interests

Integrating sedimentology, stratigraphy, geochemistry, and paleobiology in understanding the evolution of Earth's early biosphere. Primary focus on Precambrian and Lower Paleozoic carbonate systems, fabric development in carbonate and evaporite rocks, and the use of geochemical (isotopic and elemental) data and laboratory experiments to understand broad-scale trends in biospheric evolution; additional focus on investigating potential habitable environments as a co-Investigator on the Mars Science Laboratory mission.

2. Education

1998-1999, Postdoctoral Research Fellow, University of Missouri (mentor Timothy W. Lyons)
1990-1997, Ph.D., Earth and Planetary Sciences, Harvard University (advisor Andrew H. Knoll)
1986-1990, S.M., Earth and Planetary Sciences, MIT (advisor John P. Grotzinger)
1986-1990, S.B., Earth and Planetary Sciences, MIT (advisor Roger G. Burns)

3. Employment History

Associate Professor, Earth and Planetary Sciences, University of Tennessee (2006-present)
Assistant Professor, Earth and Planetary Sciences, University of Tennessee (2000-2006)
Research Faculty, Department of Geology, Tulane University (1997)
Research Fellow, Earth and Planetary Sciences, Harvard (1993-1996)
Teaching Fellow, Earth and Planetary Sciences, Harvard (1992, 1993, 1995, 1996)
Tutor in Geosciences for students with disabilities, Harvard (1995, 1996)

4. Honors and Recognition

- Awarded Roger and Beverly Bohanan Faculty Achievement Award (2013)
 - Named Kenneth G. Walker professor (2008)
 - Who's Who of Outstanding College and University Professors (2003, 2005)
 - University Award for Outstanding Services to the Arts & Sciences Advising Services (2003)
 - George Martin Hall Departmental Service Award (2002, 2008)
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5. Invited Lectures

- >45 invited lectures (see topics and locations listed below)

Topics

Curioser and Curioser: Curiosity's mission at Gale Crater
From Mauritania to Mars: Earth Scientists invade the Red Planet
The titration of the Earth: Ocean chemistry and the evolution of Proterozoic environments
Carbon and sulfur isotopes, oceanic circulation, and the Ordovician radiation
Unusual carbonate fabrics in the Precambrian and implications for ocean chemistry
Architecture of Proterozoic stromatolite reefs: case studies from Arctic Canada and West Africa
Stromatolites: the geologic record of Proterozoic life and environments

Precambrian evolution of life and environments
Bedded gypsum in the Mesoproterozoic: a critical link in understanding biospheric evolution
Ocean chemistry links to the Mesoproterozoic assembly of Rodinia
Geochemistry of Proterozoic dolostones: constraints on seawater chemistry and early diagenesis

Locations

(2013) Farragut Rotary (Knoxville, TN)
(2013) The Rockefeller University (New York, NY)
(2013) Tennessee Junior Science and Humanities Symposium (Knoxville, TN)
(2013) East Tennessee Geological Society (Knoxville, TN)
(2013) Astronomy Club of Asheville (Asheville, NC)
(2012) Council for the Advancement of Science Writing (Keynote, Annual Convention, Raleigh, NC)
(2012) University of California, Santa Barbara (Department of Earth Science)
(2012) Carnegie Institution for Science (Geophysical Laboratory, Washington, D.C.)
(2011, 2012) Repsol (Oil-Gas, North African Division, Madrid, Spain)
(2010, 2011) Wintershall Holding (Oil-Gas, North African Division, Kassel, Germany)
(2011 x2) Colby College (Department of Geosciences)
(2011, 2013) John O'Connor Senior Center (Knoxville, Tennessee)
(2010) University of Kentucky (Department of Geological Sciences)
(2010 x2) Virginia Polytechnical Institute (Department of Geological Sciences)
(2009) Nanjing Institute of Geology and Paleontology (Chinese Academy of Sciences, Nanjing, China)
(2005) Northern Illinois University (Department of Geological Sciences)
(2005) Washington University of Saint Louis (Department of Earth & Planetary Sciences)
(2004) University of Pittsburgh (Department of Geology and Planetary Sciences)
(2004 x2) Indiana University (Department of Geological Sciences)
(2002) University of Tennessee (Department of Ecology and Evolutionary Biology)
(2002; 2013) University of Tennessee Science Forum Luncheon
(2002) University of Georgia (Department of Geological Sciences)
(2001 x2) University of Iowa (Department of Geosciences)
(2001) Tennessee Technological University (Department of Geology)
(2000; 2006) Dry Dredgers (Amateur Paleontological Society of Cincinnati)
(2000 x2) University of Cincinnati (Department of Geological Sciences)
(1999; 2001) University of Tennessee (Department of Geological Sciences)
(1999) Northwestern University (Department of Earth and Planetary Sciences)
(1999) University of Rochester (Department of Earth and Environmental Sciences)
(1998) University of Oregon (Department of Geological Sciences)
(1998, 1999) University of Missouri (Department of Geological Sciences)
(1997 x2) University of Houston (Department of Geological Sciences)
(1997 x2) Tulane University (Department of Geology)
(1997) University of California at San Diego (Scripps Institute of Oceanography)
(1997) Smith College (Department of Geosciences)
(1996) University of Illinois (Department of Geology)

6. Competitive Research Funding

Pending Funding:

2. National Geographic Society (2013; \$25,000; P.I.); Using fossiliferous cherts to extend our understanding of the development and preservation of Proterozoic microbial mats.

1. NSF Earth Sciences (2013; \$205,888 ; P.I.); Ocean circulation as a driver for changes in oceanic chemistry in the Middle-Late Ordovician.

Current Funding:

1. NASA Mars Science Laboratory (2005; \$16,069,000 [$>400K$ to LCK]; co-I, w/ P.I. K. Edgett et al.); MAHLI – MArs Hand Lens Imager for the Mars Science Laboratory

Past Funding:

25. NSF Earth Sciences (2008; \$225,000 [125K to LCK]; Lead P.I., with collaborator K. Milam, Ohio University); Collaborative Research: Laterally extensive breccias in the Mesoproterozoic Atar Group, Mauritania: Tsunami deposition resulting from a marine extraterrestrial impact?

24. National Geographic Society (2008; \$25,000; P.I.); Unusual breccias of the 1.2 Ga Atar Group: tsunami deposits potentially related to an extraterrestrial impact event?

23. NSF Earth Sciences (2008; \$190,281; P.I.); Behavior of marine sulfate in the Early Paleozoic: Testing the trace sulfate proxy.

22. American Chemical Society – Petroleum Research Fund (2008; \$99,188; P.I.); Ocean circulation, nutrient cycling and the S-isotope composition of Early Paleozoic marine systems

21. NSF GK-12 (2006; \$1,979,768; collaborator with P.I. S. Horn et al.); Track I, GK-12: Enriching earth science in rural Tennessee middle schools through research-based activities on climate and environmental history

20. University of Tennessee SARIF Small Grant (2008; \$2,000; P.I.; \$2,000 match from College); Carbon and sulfur isotopes, ocean circulation, and the Ordovician radiation in central China

19. University of Tennessee Provost's Professional Development Award (2008; \$5,000; P.I.); Mineralizing microbial mats of the high Andes, Argentina: an astrobiological analogue to early Earth and mars?

18. National Geographic Society (2005; \$22,000; P.I.); Trace sulfate as a proxy for biospheric oxygenation: Implications for the ecologic expansion of animal life in the early Paleozoic.

17. National Science Foundation SGER (2004; \$20,000; P.I.); Genesis and diagenesis of an enigmatic Precambrian carbonate cement: An investigation using microanalytical and experimental techniques

16. University of Tennessee SARIF Small Grant (2004; \$4,138; P.I.); Genesis and diagenesis of an enigmatic Precambrian carbonate cement: An investigation using microanalytical and experimental techniques

15. National Science Foundation, NSF-EAR (2002; \$13,000; collaborative w/ J.K. Bartley); Distribution and genesis of unusual carbonate fabrics (Atar Group, Mauritania) – Understanding the evolution of the Proterozoic carbonate factory – funds provided for reconnaissance field work

14. NASA Exobiology NAG5-10666 (2001; \$144,779; P.I.); Recognizing biotic influences on planetary evolution: Investigating the biogeochemical record of microbial metabolism during Mesoproterozoic ocean-atmosphere oxidation

13. National Geographic Society (2001; \$25,000; P.I.); Carbonate precipitation and the development of Proterozoic stromatolitic reefs, Mauritania

12. National Geographic Society (2000; \$12,000; co-I, w/ J.K. Bartley); Mesoproterozoic biogeochemical change: field studies in the Southern Urals
 11. University of Tennessee SARIF Small Grant (2001; \$5,000; P.I.; \$5,000 match from College); Stratigraphy and development of Proterozoic stromatolite reefs, Dismal Lakes Group, NWT, Canada
 10. University of Tennessee Provost's Professional Development Award (2001; \$5,000; P.I.); Stratigraphy and development of Proterozoic stromatolite reefs, Dismal Lakes Group, NWT, Canada
 9. University of Tennessee SARIF GRA Award (2001; \$3,000; for M.S. student Mark Pollock); Distribution and genesis of "molar-tooth" fabric, Montana
 8. University of Tennessee SARIF Research Award (2000; \$25,000; co-P.I., w/ L. Taylor and T. Labotka); Investigation of geologic materials: analysis and acquisition of image data by optical and cathodoluminescence microscopy
 7. University of Tennessee SARIF Award (2000; \$10,650; P.I.); Enhancement of sedimentary geochemistry preparatory facilities
 6. National Science Foundation EAR-9725538 (1998; \$184,490; co-P.I., w/ T.W. Lyons and T.D. Frank); Geochemical and isotopic constraints on Mesoproterozoic ocean chemistry – working toward a global perspective
 5. National Geographic Society Grant #6021-97 (1997; \$16,350; P.I.); Mesoproterozoic cycling of C, S, and Sr isotopes: do global tectonics influence biogeochemical cycling?
 4. University of Missouri Research Board (1998; \$39,832; co-P.I., w/ T.W. Lyons); Sulfur isotopic records of Precambrian ocean chemistry via Carbonate Associated Sulfate (CAS)
 3. NSF Grant EAR-9316860 (1997; \$50,000; P.I., originally awarded to the late R.J. Horodyski); Studies in Precambrian Paleontology (changed to Geochronology of Proterozoic carbonate strata)
 2. National Geographic Society Grant #5304-94 (1994; \$12,000; P.I.); Physical, chemical and biological controls on Mesoproterozoic carbonate sedimentation
 1. Polar Continental Shelf Project - Energy, Mines and Resources, Canada (1993, 1994, 1997); Logistical support: late Mesoproterozoic carbonate-evaporite successions
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7. Field Excursions for Research

- (2009) Evaporative alkaline lakes of the high Andes, Argentina (2 weeks)
- (2008) Lower Paleozoic carbonate strata of the Hubei Province, Central China (2 weeks)
- (2006, 2008) Lower Paleozoic carbonate strata of the Precordillera, Argentina (7 weeks)
- (2006) Lower Paleozoic carbonate strata of western Newfoundland (2 weeks)
- (1991, 1999, 2001, 2002, 2003, 2004, 2009, 2010) Mesoproterozoic Belt Supergroup, Montana (28 weeks)
- (1993, 1994, 1997) Mesoproterozoic carbonates of the Bylot Supergroup, Baffin Island (22 weeks)
- (1998, 2002) Mesoproterozoic carbonates of the Dismal Lakes Group, NWT (14 weeks)
- (1998, 2003) Mesoproterozoic carbonates of the Atar Group, Mauritania, West Africa (13 weeks)
- (1988, 1989) Neoproterozoic-Cambrian strata of the Basin and Range, SE California (7 weeks)
- (2001) Mesoproterozoic strata of the southern Ural Mountains, Russia (5 weeks)
- (1997) Mesoproterozoic Allamoore and Castner Formations, west Texas (3 weeks)

8. Publications Resulting from Research [current as of August 15, 2013]

*Refereed Publications (In Preparation; *Graduate and ‡Undergraduate primary author)*

8. *Guo, H., Du, Y., **Kah, L.C.**, Huang, J., Hu, C., Huang, H., 2013, 3. **Kah, L.C.** and Zhan, R. Carbon and sulphur isotope signatures of the Mesoproterozoic Jixian Group, North China. Gondwana Research (submission planned, Fall 2013).
7. Malin, M.C., et al., Science and engineering observations from the Mars Science Laboratory Mars Descent Images (MARDI). Journal of Geophysical Research - Planets (submission planned, Fall 2013)
6. Blaney, D., et al., Chemical and textural variability among rocks observed at Rocknest, Gale crater. Journal of Geophysical Research - Planets (submission planned, Fall 2013)
5. Gupta, S., et al., Geometry, paleomorphology, and hypotheses for origin of the Mount Sharp 'clinoform' unit, Gale Crater. Journal of Geophysical Research - Planets (submission planned, Fall 2013)
4. *Cadioux, S.B. and **Kah, L.C.**, Intracrater layered deposits in Arabia Terra, Mars, may indicate wet, cold conditions in late Noachian-Early Hesperian. Icarus (submission planned, Fall 2013).
3. **Kah, L.C.**, Bartley, J.K., Frank, T.D., and Lyons, T.W. Deepwater stromatolites from the Dismal Lakes Group, Arctic Canada: implications for microbial growth and lithification. Geobiology (submission planned, Fall 2013)
2. **Kah, L.C.** and *Thompson, C.K., Marine Sr-isotope change in the Ordovician: Evidence from partitioning of Mg²⁺ and Sr²⁺ into marine calcite. Nature Geoscience (submission planned, Fall 2013).
1. *Mackey, T., Sumner, D.Y., Haws, I., and **Kah, L.C.**, Antarctic lacustrine microbialites as analogues for Proterozoic stromatolite growth morphologies (submission planned, Fall 2013).

*Refereed Publications (In Review or In Revision; *Graduate and ‡Undergraduate author)*

8. ‡Jaret, S.J., **Kah, L.C.**, and Harris, R.S. Progressive deformation of feldspar recording low barometry impact processes. Earth and Planetary Science Letters (*submitted, July 2013*).
7. Grotzinger, J.P., Sumner, D.Y., **Kah, L.C.**, and 67 others, A habitable fluvio-lacustrine environment at Yellowknife Bay, Gale Crater, Mars. Science (*submitted, July 2013*)
6. Yingst, R.A., **Kah, L.C.**, and 20 others, Characteristics of pebble and cobble-sized clasts along the Curiosity rover traverse from Bradbury Landing to Rocknest. Journal of Geophysical Research - Planets (*submitted, May 2013*)
5. Minitti, M.E., **Kah, L.C.**, and 30 others, MAHLI at the Rocknest Wind Drift: Science and Science-enabling Activities. Journal of Geophysical Research - Planets (*submitted, May 2013*)
4. Weins, R.C., and 48 others, Rock compositions along Curiosity's initial traverse in Gale Crater, Mars. Nature (*submitted, May 2013*)
3. Gomez, F.J., **Kah, L.C.**, Bartley, J.K., and Astini, R.A.. Mineralized microbialites in a high-altitude Andean lake as a natural analogue for Proterozoic stromatolite formation. Palaios (*submitted, May 2013*).
2. Blake, D.F., and 43 others, Characterization and analysis of the Rocknest soil. Science (*in revision*)
1. *Thompson, C.K., **Kah, L.C.**, and Kaufman, A.J. Did ventilation of euxinic oceans herald the end of Ordovician greenhouse climate? Nature Geosciences (*in revision*).

Refereed Publications (Accepted, in Press, or Published; *Graduate and ‡Undergraduate author)

32. *Gilleaudeau, G.J., and **Kah, L.C.**, Oceanic molybdenum drawdown by epeiric sea expansion in the Mesoproterozoic. *Chemical Geology (Accepted, July 2013)*.
31. Chakrabarti, G., Shome, D., Kumar, S., ‡Stephens III, G.M., and **Kah, L.C.**, Carbonate platform development in a Palaeoproterozoic extensional basin, Vempalle Formation, Cuddapah Basin, India. *Journal of Asian Earth Sciences (Accepted, July 2013)*.
30. Knoll, A.H., ‡Wörndle, S., and **Kah, L.C.**, Covariance of microfossils assemblages and microbialite textures across a late Mesoproterozoic carbonate platform. *Palaios (Accepted, June 2013)*.
29. Williams, R.M.E., et al., including **Kah, L.C.**, 2013, Martian fluvial conglomerates at Gale Crater. *Science*, v. 340, p. 1068-1072.
28. Hazen, R.M., Downs, R.T., Jones, A.P., **Kah, L.C.**, 2013, Carbon mineralogy and crystal chemistry. In Hazen, R.M., Baross, J., Hemley, R.J., and Jones, A.P. (eds.), *Reviews in Mineralogy and Geochemistry*, v. 75, p. 7-46.
27. Hazen, R.M., Downs, R.T., **Kah, L.C.**, and Sverjensky, D., 2013, Carbon mineral evolution. In Hazen, R.M., Baross, J., Hemley, R.J., and Jones, A.P. (eds.), *Reviews in Mineralogy and Geochemistry*, v. 75, p. 79-107.
26. *Gilleaudeau, G.J. and **Kah, L.C.**, 2013, Carbon isotope records in a Mesoproterozoic epicratonic sea: Carbon cycling in a low-oxygen world. *Precambrian Research*, v. 228, p. 85-101.
25. *Guo, H., Du, Y., **Kah, L.C.**, Huang, J., Hu, C., Huang, H., 2013, Isotopic compositions of organic and inorganic carbon from the Mesoproterozoic of North China: Implications for biological and oceanic evolution. *Precambrian Research*, v. 224, p. 169-183.
24. Edgett, K.S., Yingst, R.A., Ravine, M.A., Caplinger, M.A., Maki, J.N., Ghaemi, F.T., Schaffner, J.A., Bell III, J.F., Edwards, L.J., Herkenhoff, K.E., Heydari, E. **Kah, L.C.**, Lemmon, M.T., Minitti, M.E., Olson, T.S., Parker, T.J., Rowland, S.K., Schieber, J., Sullivan, R.J., Sumner, D.Y., Thomas, P.C., Jensen, E.H., Simmonds, J.J., Sengstacken, A.J., Willson, R.G., Goetz, W., 2012, Curiosity's Mars Hand Lens Imager (MAHLI) Investigation. *Space Science Reviews*, v. 170, p. 259-317.
23. *Thompson, C.K., **Kah, L.C.**, Astini, R., Bowring, S.A., Buchwaldt, R., 2012, Bentonite geochronology, marine geochemistry, and the Great Ordovician Biodiversification Event (GOBE). *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 321-322, p. 88-101.
22. **Kah, L.C.**, Bartley, J.K., and ‡Teal, D.A., 2012, Chemostratigraphy of the late Mesoproterozoic Atar Group, Mauritania: Muted isotopic variability, facies correlation, and global isotopic trends. *Precambrian Research*, v. 200-203, p. 82-103.
21. *Thompson, C.K., and **Kah, L.C.**, 2012, Sulfur isotope evidence for widespread euxinia and a fluctuating oxycline in Early to Middle Ordovician greenhouse oceans. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 313-314, p. 189-214.
20. Blumenberg, M., Theil, V., Riegel, W., Doering, S., **Kah, L.C.**, and Reitner, J., 2012, Black shale formation by microbial mats lacking sterane-producing eukaryotes, Late Mesoproterozoic (1.1 Ga) Taoudeni basin, Mauritania. *Precambrian Research*, v. 196-197, p. 113-127.

19. **Kah, L.C.**, and Bartley, J.K., 2011, The Precambrian record of evolving oxygen: *International Geology Review*, v. 53, p. 1424-1442, DOI 10.1080/00206814.2010.527651.
18. **Kah, L.C.**, Bartley, J.K., and ‡Stagner, A.F., 2009, Reinterpreting a Proterozoic enigma: *Conophyton-Jacutophyton* stromatolites of the Mesoproterozoic Atar Group, Mauritania: *International Association of Sedimentology Special Publication 41*, p. 277-295.
17. **Kah, L.C.**, and Riding, R., 2007, Mesoproterozoic carbon dioxide levels inferred from calcified cyanobacteria: *Geology*, v. 35, p. 799-802.
16. Bartley, J.K., **Kah, L.C.**, ‡McWilliams, J.L., ‡Stagner, A.F. 2007 Carbon Isotope Chemostratigraphy of the Avzyan Formation (Southern Urals, Russia): Signal recovery in a fold-and-thrust belt: *Chemical Geology*, v. 237, p. 211-232.
15. **Kah, L.C.**, ‡Crawford, J.C., Bartley, J.K., Kozlov, V.I., Sergeeva, N.D., Puchkov, V.N., 2007, Carbon isotope chemostratigraphy as a tool for constraining the age of subsurface strata (Kama-Belaya Trough, East European Platform, Russia): *Stratigraphy and Geological Correlation*, v. 15, p. 12- 29.
14. Lyons, T.W., *Gellatly, A.M., McGoldrick, P.J., and **Kah, L.C.**, 2006, Proterozoic sedimentary exhalative (SEDEX) deposits and their links to evolving ocean chemistry: in Ohmoto, H., and Kesler, S.E., eds., *Evolution of the Early Atmosphere, Hydrosphere, and Biosphere: Constraints from Ore Deposits: GSA Special Paper*, v. 198, p. 169-184.
13. *Pollock, M.D., **Kah, L.C.**, and Bartley, J.K., 2006, Morphology of molar-tooth structures in Precambrian carbonates: influence of substrate rheology and implications for genesis: *Journal of Sedimentary Research*, v. 76, p. 310-323.
12. **Kah, L.C.**, Bartley, J.K., Frank, T.D., and Lyons, T.W., 2006, Reconstructing sea-level change from the internal architecture of stromatolite reefs: an example from the Mesoproterozoic Sulky Formation, Dismal Lakes Group, arctic Canada: *Canadian Journal of Earth Sciences*, v. 43, p. 653-669.
11. Johnston, D.T., Wong, B.A., Farquhar, J., Kaufman, A.J., Strauss, H., Lyons, T.W., **Kah, L.C.**, Canfield, D.E., 2005, Active microbial sulfur disproportionation in the Mesoproterozoic: *Science*, v. 310, p. 1477-1479.
10. **Kah, L.C.**, Lyons, T.W., and Frank, T.D., 2004, Low marine sulphate and protracted oxygenation of the Proterozoic biosphere: *Nature*, v. 431, p. 834-838.
9. Bartley, J.K., and **Kah, L.C.**, 2004, Marine carbon reservoir, Corg-Ccarb coupling, and the evolution of the Proterozoic carbon cycle: *Geology*, v. 32, p. 129-132.
8. Lyons, T.W., **Kah, L.C.**, and *Gellatly, A.M., 2003, The Precambrian sulfur isotope record of evolving atmospheric oxygen: in *Tempos and events in Precambrian time* (P.G. Eriksson, ed.), *Developments in Precambrian Geology*, v. 12, p. 421-440.
7. Frank, T.D., **Kah, L.C.**, and Lyons, T.W., 2003, Changes in organic matter production and accumulation as a mechanism for isotopic evolution in the Mesoproterozoic Ocean: *Geological Magazine*, v. 140, p. 397-420.
6. **Kah, L.C.** and Bartley, J.K., 2001, Preface: in J.K. Bartley and L.C. Kah, eds., *Rodinia and the Mesoproterozoic Earth-Ocean System*, *Precambrian Research*, v. 111, p. 1-4.

5. **Kah, L.C.**, Lyons, T.W., and Chesley, J., 2001, Geochemistry of a 1.2 Ga carbonate-evaporite succession, northern Baffin and Bylot islands: Implications for Mesoproterozoic marine evolution: in J.K. Bartley and L.C. Kah, eds., *Rodinia and the Mesoproterozoic Earth-Ocean System*, *Precambrian Research*, v. 111, p. 203-234.
4. **Kah, L.C.**, 2000, Preservation of depositional $\delta^{18}\text{O}$ signatures in Proterozoic dolostones: Geochemical constraints on seawater chemistry and early diagenesis: in J.P. Grotzinger and N.P. James, eds., *Deposition and Diagenesis in an Evolving Precambrian World*, *SEPM Special Publication*, v. 67, p. 245-360.
3. **Kah, L.C.**, *Sherman, A.B., Narbonne, G.M., Kaufman, A.J., and Knoll, A.H., 1999 [Published mid-2000], $\delta^{13}\text{C}$ stratigraphy of the Proterozoic Bylot Supergroup, northern Baffin Island: Implications for regional lithostratigraphic correlations: *Canadian Journal of Earth Sciences*, v. 36, p. 313-332.
2. **Kah, L.C.** and Knoll, A.H., 1996, Microbenthic distribution of Proterozoic tidal flats: Environmental and taphonomic considerations: *Geology*, v. 24, p. 79-82.
1. **Kah, L.C.** and Grotzinger, J.P., 1992, Early Proterozoic (1.9 Ga) thrombolites of the Rocknest Formation, Northwest Territories, Canada: *Palaios*, v. 7, p. 305-315.

Abstracts (*Graduate and ‡Undergraduate student presentations)

122. *Thibodeau, A., Bergquist, B., **Kah, L.**, Ghosh, S., Ono, S., Hazen, R., 2013, Mass independent fractionation of Hg isotopes preserved in mid-Proterozoic marine shales: American Geophysical Union, Annual Meeting (submitted).
121. Lewis, K.W., Edgar, L.A., Gupta, S., Rubin, D.M., Kocurek, G., Anderson, R.B., Hayes, A.G., **Kah, L.C.**, and the MSL Science Team, 2013, Geologic structure at the Curiosity field site from stereo topography: American Geophysical Union, Annual Meeting (submitted).
120. Leville, R., Wiens, R., Anderson, R., Berger, G., Bridges, J, Clark, B., Cousin, A., Edgar, L., Fabre, C., Forni, O., Grotzinger, J., **Kah, L.**, Lanza, N., Lasue, J., Le Mouélic, S., Leshin, L., Mangold, N., Maurice, S., McLennan, S., Meslin, P-Y., Mezzacappa, A., Newsom, H., *Ollila, A., Schröder, S., *Siebach, K., Thompson, L., Tokar, R., and the MSL Science Team, 2013, ChemCam investigation of resistant fracture-fill cements at Yellowknife Bay, Gale Crater: American Geophysical Union, Annual Meeting (submitted).
119. *Siebach, K., Grotzinger, J., **Kah, L.**, Leville, R., *Stack, K., Sumner, D., Edgar, L., and the MSL Science Team, 2013, Raised ridges in the Sheepbed member as evidence for early subaqueous diagenesis at Yellowknife Bay, Gale Crater, Mars: American Geophysical Union, Annual Meeting (submitted).
118. Edgar, L.A., Gupta, S., Rubin, D.M., Lewis, K.W., Kocurek, G., Anderson, R., Bell III, J.F., Dromart, G., Edgett, K., Grotzinger, J.P., Hardgrove, C., **Kah, L.C.**, Leville, R., Malin, M., Mangold, N., Milliken, R., Minitti, M., Rice, M., Schieber, J., *Stack, K.M., Sumner, D.Y., and the MSL Science Team, 2013, Sedimentary petrography and facies analysis at the Shaler outcrop, Gale Crater, Mars: American Geophysical Union, Annual Meeting (submitted).
117. Gupta, S., Edgar, L.A., Rubin, D.M., Lewis, K.W., Kocurek, G., Anderson, R., Bell III, J.F., Dromart, G., Edgett, K., Grotzinger, J.P., Hardgrove, C., **Kah, L.C.**, Leville, R., Malin, M., Mangold, N., Milliken, R., Minitti, M., Rice, M., Schieber, J., *Stack, K.M., Sumner, D.Y., and the MSL Science Team, 2013, Sedimentary architecture of the Shaler outcrop, Gale Crater, Mars: paleoenvironmental and sediment transport implications: American Geophysical Union, Annual Meeting (submitted).

116. Rice, M., Bell III, J., Wellington, D., Godber, A., Hardgrove, C., Ehlmann, B., Grotzinger, J., Kinch, K., *Fraeman, A., Johnson, J., Malin, M., *Stack, K., *Siebach, K., **Kah, L.**, and the MSL Science Team, 2013, Hydrated mineral at Yellowknife Bay, Gale Crater, Mars: Observations from Mastcam's science filters: American Geophysical Union, Annual Meeting (submitted).
115. *Gilleaudeau, G.J., and **Kah, L.C.**, 2013, Tracking the chemocline in ancient oceans: and example from the Mesoproterozoic of Mauritania: Geological Society of America, Annual Meeting (submitted).
114. Bartley, J.K., **Kah, L.C.**, Frank, T.D., and Lyons, T.W., 2013, Growth and preservation of cusped microbial forms, Mesoproterozoic Dismal Lakes Group, Arctic Canada: Geological Society of America, Annual Meeting (submitted).
113. *Buongiorno, J., **Kah, L.C.**, and Gomez, F.J., 2013, Time-series isotopic and elemental compositions of mineralized microbialites within a high-altitude Andean lake (Laguna Negra, Catamarca Province, NW Argentina): Geological Society of America, Annual Meeting (submitted).
112. *Manning-Berg, A.R., and **Kah, L.C.**, 2013, Calcitized evaporites and the evolution of the Earth's early biosphere: Geological Society of America, Annual Meeting (submitted).
111. ‡Pewitt, M.L., **Kah, L.C.**, and Gilleaudeau, G.J., 2013, Redox structure of Mesoproterozoic shale derived from sulfide minerals and mineral texture: Geological Society of America, Annual Meeting (submitted).
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19. **Kah, L.C.**, and Lyons, T.W., 1999, The Mesoproterozoic history of biospheric oxygen: critical tests from 1.2 Ga bedded sulfates, Society Cliffs Formation, Baffin Island: Geological Society of America, Annual Meeting, v. 31, p. A-274..

18. **Kah, L.C.**, Bartley, J.K., Frank, T.D., and Lyons, T.W., 1999, Photosynthetic and possible chemosynthetic communities of the ~1.3 Ga Dismal Lakes Group, NWT, Canada: Geological Association of Canada-Mineralogical Association of Canada Annual Meeting, v. 24, p. 60.

17. **Kah, L.C.**, and Bartley, J.K., 1999, Ocean chemistry links to the Mesoproterozoic assembly of Rodinia: European Union of Geosciences, Journal of Conference Abstracts, v. 4, p. 118.

16. Bartley, J.K., **Kah, L.C.**, and King, K., 1999, Atypical molar-tooth structures in carbonates of the Atar Group, Mauritania: field and petrographic analysis: Geological Society of America, Annual Meeting, v. 31, p. A-457.

15. Bartley, J.K., **Kah, L.C.**, Frank, T.D., and Lyons, T.W., 1999, Photosynthetic and possible chemosynthetic communities of the ~1.3 Ga Dismal Lakes Group, NWT, Canada: Southeastern Section, Geological Society of America, Abstracts with Programs, v. 31, p. A-4.

14. Lyons, T.W., and **Kah, L.C.**, 1999, Sulfur geochemistry of the Mesoproterozoic Bylot Supergroup, northern Baffin and Bylot Islands, Canada: local and global implications. Goldschmidt Conference, August 1999.

13. Lyons, T.W., **Kah, L.C.**, *Leupke, J.J., and Frank, T.D., 1999, Recent results from the Mesoproterozoic: carbonates, evaporites, and black shales from the Canadian Arctic and Belt Supergroup: Penn State Astrobiology Research Center, Annual Conference.

12. **Kah, L.C.**, and Bartley, J.K., 1998, Ocean chemistry links to the Mesoproterozoic assembly of Rodinia: Part 1 - carbon isotopic record.: Geological Society of America, Abstracts with Programs, v. 30, p. A160.

11. **Kah, L.C.**, *Sherman, A.B., Narbonne, G.M., Kaufman, A.J., and Knoll, A.H., 1998, Isotope stratigraphy of the Proterozoic Bylot Supergroup, northern Baffin Island: Implications for regional lithostratigraphic correlations: American Association of Petroleum Geologists, Annual Convention, CD file #347.

10. Bartley, J.K. and **Kah, L.C.**, 1998, Ocean chemistry links to the Mesoproterozoic assembly of Rodinia: Part 2 - strontium isotopic record: Geological Society of America, Abstracts with Programs, v. 30, p. A-109.

9. **Kah, L.C.**, 1997, Styles of carbonate deposition in Mesoproterozoic successions: a balance of environmental and biogeochemical processes: CSPG-SEPM Joint Conference, Calgary, Alberta, June 1997, p. 149.

8. **Kah, L.C.**, and Bartley, J.K., 1997, Establishing a carbon isotopic reference curve for the Mesoproterozoic: Biogeochemical links to the tectonic assembly of Rodinia: Geological Society of America, Abstracts with Programs, v. 29, p. A-115.
 7. **Kah, L.C.**, 1996, Preservation of depositional $\delta^{18}\text{O}$ signatures in Proterozoic dolomites: Geochemical constraints on seawater chemistry and environment of early diagenesis: Geological Society of America, Abstracts with Programs, v. 28, p. A-114.
 6. **Kah, L.C.**, and Knoll, A.H., 1996, Microbenthic distribution in Proterozoic tidal flats: Environmental and taphonomic considerations: Beijing, IGC Program and Abstracts, Session 8-5.
 5. **Kah, L.C.**, 1995, Variation of $\delta^{18}\text{O}$ in a Mesoproterozoic peritidal carbonate: Implications for depositional environment and early diagenesis: Geological Society of America, Abstracts with Programs, v. 27, p. A-273.
 4. **Kah, L.C.**, 1994, Physical and microbial controls on carbonate microfabric formation in the Mesoproterozoic Society Cliffs Formation: Geological Society of America, Abstracts with Programs, v. 26, p. A-129.
 3. **Kah, L.C.** and Knoll, A.H., 1994, Carbonate precipitation in the Mesoproterozoic Society Cliffs Formation, northern Baffin Island: Program with Abstracts, Geological Association of Canada, v. 19, p. A-56.
 2. Knoll, A.H. and **Kah, L.C.**, 1994, Proterozoic tidal flats: Distribution of carbonate microfabrics and microbenthos in time and space: Geological Society of America, Abstracts with Programs, v. 26, p. A-129.
 1. **Kah, L.C.**, and Grotzinger, J.P., 1991, Early Proterozoic (1.9 Ga) thrombolites of the Rocknest Formation, Northwest Territories, Canada: Abstracts and Programs of the Geological Society of America, v. 22, p. A-91.
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9. Course Instruction

Course Instruction at 100-level

Earth, Life, and Time (100 level; primarily non-science majors)

- process-oriented course investigating modern ecosystem interactions, evaluation of geologic time and the stratigraphic record, and major developments in the history of life on Earth
- nominated twice by students for inclusion in the Who's Who of Outstanding University Professors
- average student evaluation 3.7/5.0 (>500 respondents)

The Dynamic Earth (100 level; primarily non-science majors)

- principles and process-oriented course investigating Earth materials and Earth processes
- average student evaluation 3.6/5.0 (>100 respondents)

Course Instruction at 300-level

Sedimentation and Stratigraphy (300 level; undergraduate geoscience majors)

- process-oriented course that focuses on understanding the sedimentological record from first principles
- instituted two fieldtrips and a class project where students make and interpret a thin section, document findings with photomicrographs, and prepare and present a GSA-style poster to the department; also preparation of draft and final field trip reports
- average student evaluation 4.3/5.0 (>50 respondents)

Course Instruction at 400 and 500-level

Introduction to Oceanography (400-500 level lecture-based course)

- lecture/reading/discussion course covering issues in physical, chemical, and biological oceanography
- average student evaluation 3.9/5.0 (10 respondents, first time course)

Carbonate Sedimentology (500 level, graduate lecture/lab/discussion course)

- lecture/lab/reading/discussion course covering issues in carbonate sedimentology and geochemistry
- instituted a class project where students thin section a carbonate rock, interpret petrographic and cathodoluminescence features, microdrill phases for elemental (Mg, Ca, Mn, Fe, Sr) and isotopic (C and O) analysis, interpret findings, and prepare and present a GSA-style poster to the department.
- average student evaluation 4.4/5.0 (>25 respondents)

Course Instruction at 600-level

Use and Abuse of Sequence Stratigraphy (600 level, graduate seminar)

- critical analysis and discussion of literature pertaining to sequence stratigraphic analysis

Carbon, Sulfur, and Oxygen in Earth History (600 level, graduate seminar)

- critical analysis and discussion of literature pertaining to isotopic proxies for oceanographic and biogeochemical change through Earth history.

Proterozoic Evolution of Life and Environments (600 level, graduate seminar)

- critical analysis and discussion of literature pertaining to Proterozoic environments
- topics change depending on interest of the students

Evolution of Early Planetary Biospheres (600 level, graduate seminar)

- critical analysis and discussion of literature pertaining to the origin of planetary biospheres
- co-taught, in various years, with planetary scientists, Dr. Hap McSween and Dr. Pascal Lee

400 Million Years that Changed the World (600 level, graduate seminar)

- critical analysis and discussion of literature pertaining to Earth's tectonic, geochemical, and biologic evolution from the Neoproterozoic to the end-Ordovician

10. Student Mentoring

*Mentoring at the Ph.D. Level (*all students encouraged to apply for independent research funding)*

1. Geoff Gilleaudeau (Ph.D. 2013) – Geochemistry of Epeiric Seas, Mesoproterozoic Atar Group
Awards: - \$300, Graduate Professional Promise award (2013)
- \$500, Outstanding Graduate Presentation (2011)
- \$1700, SEPM Student Research Grant (2008)
- \$1200, GSA Graduate Student Research Grant (2008)
- \$1000, GSA Sedimentary Geology Division Award for outstanding research (2008)
- \$2000, American Association for Petroleum Geology (2008)
- \$3000, Evolving Earth Foundation (2008)
- \$4000, Barringer Family Fund for Meteorite Impact Research (2008)
2. Cara Thompson (Ph.D. 2011) – Understanding C-S cycles in the lower Paleozoic
Awards: - \$1000, Sigma Xi Graduate Student Research Grant (2006)
- \$1800, GSA Graduate Student Research Grant (2007)
- \$1500, SEPM Student Research Grant (2008)
- NSF Post-doc at Stonybrook University (2011-2012)
Currently: - Lecturer, Santa Monica College (2012)

*Mentoring at the M.S. Level (*all students encouraged to apply for independent research funding)*

1. Ashley Manning-Berg (M.S.) – Calcitization of Sulfate Evaporites, Mesoproterozoic Atar Group (*current*)
Awards: - ExxonMobil Summer Internship (2013)
- \$1699, GSA Graduate Student Research Grant (2013)
- \$1200, SEPM Student Research Grant (2013)
- \$400, Sigma Xi Graduate Student Research Grant (2013)
- \$300, Outstanding Graduate Teaching Assistant (2013)
2. Joy Buongiorno (M.S.) – Paired isotopic analysis of lacustrine carbonate and organic matter (*current*)
Awards: - \$1913, GSA Graduate Student Research Grant (2013)
- \$750, SEPM Student Research Grant (2013)
- \$2800, UT Graduate Student Travel Award (2013)
- \$750, Bill Ross Field Camp Scholarship (2013)
- \$100, The Society for Organic Petrology (2013)
3. Sarah Cadieux (M.S. 2011) – Stratal analysis of layered rocks, Ariabia Terra, Mars
Awards: - \$500, Outstanding Graduate Presentation (2011)
- \$500, SE GSA Student Research Grant (2009)
- \$800, SEPM Student Research Grant (2009)
- \$500, GSA Planetary Geology Division Travel Grant (2009)
Currently: - Ph.D. program at Indiana University
4. Miles Henderson (M.S. 2010) – Ultrastructural and geochemical analysis of *Grypania*
Awards: - \$500, SE GSA Student Research Grant (2009)
- \$800, Sigma Xi Graduate Student Research Grant (2009)
- \$1800, SEPM Student Research Grant (2009)
Currently: - Employed at Evergreen Environmental

5. Emily Goodman (M.S. 2007) – Genesis and diagenesis of unstable carbonate polymorphs
 Awards: - Honorable Mention, NSF Graduate Fellowship (2005)
 - \$2400, GSA Graduate Student Research Grant (2005)
 Currently: - Employed by Hess Exploration (formerly employed by ExxonMobil)

6. Curt Crawford (M.S. 2005) – Microanalytical investigation of Precambrian carbonate fabrics
 Awards: - \$2000, GSA Graduate Student Research Grant (2004)
 - \$1200, SEPM Friedman Research Scholarship (2004)
 - \$810, Sigma Xi Graduate Student Research Grant (2004)
 Currently: - Employed by Quantum Environmental

7. Quintin Overocker (M.S. 2005) – Investigating the origin of the Wallace breccias, Belt Supergroup
 Awards: - \$1900, GSA Graduate Student Research Grant (2004)
 - \$700, Belt Association Student Research Grant (2004)
 - \$500, Tobacco Root Geological Association Student Field Award (2004)
 - \$200, Sigma Xi Graduate Student Research Grant (2004)
 - ExxonMobil Basin Analysis short course participation (November 2004)
 Currently: - Employed by University of Wisconsin, Madison (formerly by Stillwater Mining)

8. Steve Welch (M.S. 2005) – Parasequence development in the Mesoproterozoic Belt Supergroup
 Awards: - ExxonMobil Internship (September-December 2003)
 - \$2500, SEPM Friedman Research Scholarship (2002)
 - \$1600, GSA Graduate Student Research Grant (2002)
 Currently: - Employed by ExxonMobil

9. Mark Pollock (M.S. 2003) – Distribution and genesis of “molar-tooth” fabric, Montana
 Awards: - \$85, SE GSA Travel Grant (2002)
 - \$900, Sigma Xi Grants-in-aid for Research (2001)
 - \$500, Belt Association Research Grant (2001)
 - \$500, Tobacco Root Geological Survey, Jack Harrison Field Scholarship (2001)
 - \$185, SE GSA Graduate Student Research Grant (2001)
 Currently: - Employed by AMEC Engineering and Geotechnical

Mentoring at the B.S. Level (*all students encouraged to apply for independent research funding)

1. Michelle Pewitt (B.S.) – Determining water column redox from pyrite-marcasite in black shale (*current*)
 Awards: - \$300, Lunar and Planetary Science Institute; Moon Buggle Race (2012)
 - \$300, Lunar and Planetary Science Institute; Moon Buggy Race (2013)
 - \$400, KGMS Robert and Flora Lee Walker Field Camp Award (2013)
 - \$750, Bill Ross Field Camp Award (2013)

2. Jenny Dabbs (B.S.) – Isotopic and trace element geochemistry of modern echinoids (2012)
 Awards: - \$200, UT Professional Promise Award (2012)
 - \$300, EPS Coffee Cup award for highest GPA (2012)
 - ORISE Higher Education Research Internship at ORNL (2012)
 - \$400, Outstanding Senior Award (2013)
 - \$750, Bill Ross Field Camp Award (2013)

3. Michael McConnell (B.S.) – Trace element variation in modern microbialites (2012)
 Awards: - \$200, UT Professional Promise Award (2012)

- \$150, EPS Travel Grant (2012)
- \$200, KGMS Award for Geological Excellence (2012)
- \$400, KGMS Daniel Miller Field Camp Award (2013)
- \$750, Bill Ross Field Camp Award (2013)

4. Kelli Harrelson (B.S. 2010) – analysis of carbon and sulfur isotopes in the Ordovician
Currently: - Brown and Caldwell, Inc., Nashville
5. Adam Backus (B.S. 2010) – analysis of carbon and sulfur isotopes in the Ordovician
6. Jesse Sexton (B.S. 2010) – Analysis of a fossilized Pennsylvanian forest
Awards: - \$50, SE Paleontological Society, Best Student Presentation (2009)
7. Steven Jaret (B.S. 2009) – Petrology of crater impact materials, Taoudeni Crater, Mauritania
Awards: - \$2000, Planetary Geoscience Institute (2008)
- \$2500, Chancellor's Honors Program (2008)
- First Place, Natural Sciences Division, UT Undergraduate Research Fair (EURēCA)
- Phi Kappa Phi Award, UT Undergraduate Research Fair (EURēCA)
Currently: - Ph.D. program, planetary science, SUNY Stonybrook
8. Jesse Stephens (B.S. 2009) – Trace Sulfate Analysis of Ordovician Rocks from China
Currently: - Employed as a Research Associate, Oak Ridge National Laboratories
9. James Pratt (B.S. 2009) – Trace Sulfate analysis of Ordovician rocks from China
10. James Glover (B.S. 2006) – Petrographic and geochemical investigation of a Proterozoic speleothem
Awards: - \$500, First Place, University of Tennessee Undergraduate Research Fair (EURēCA)
Currently: - Employed by ExxonMobil (after M.S. at Washington State University)
11. Emily Goodman (B.S. 2005) – Preservation and diagenesis of Proterozoic evaporite sediments
Awards: - \$125, SE GSA Travel Grant (2004)
Currently: - Employed by Hess Exploration (formerly employed by ExxonMobil)
12. David Teal (B.S. 2005) – Chemostratigraphy of the Atar Group, Mauritania
Awards: - \$281, SE GSA Travel Grant (2005)
Currently: - M.S. degree in Astronomy at Arizona; currently Ph.D. at Indiana University
13. Adam Kirthlink (B.S. 2005) – Protocol development for laboratory precipitation of vaterite
Currently: - Oak Ridge National Laboratories
14. Curt Crawford (B.S. 2003) – Chemostratigraphy of Mesoproterozoic strata, Russia
Awards: - \$150, SE GSA Travel Grant (2003)
Currently: - Employed by Quantum Environmental Corporation
15. Meghan Deford (B.S. 2002) –East Tennessee watershed health diagnosed by embryonic fish mortality
Awards: - \$1200, Waste Management Undergraduate Research Fund (2001)
- \$1400, Alumni Undergraduate Research Scholarship (2001)
Currently: - Teacher and Head of Environmental Science Program, Knox County Schools

Post-doctoral Fellows and Visiting Ph.D. Students

1. Fernando Gomez (Post-Doc) – Arid system lakes of the high Andes, Argentina (2008-2009)
Awards: - \$6000, NASA Planetary Biology Internship (2008)
Currently: - Research Professor, CONICET, University of Cordoba, Argentina
2. Hua Guo (Ph.D.) – Carbon and sulfur isotopic chemistry, Mesoproterozoic Jixian System (2012)
Awards: - \$40000, Government of China, Educational Travel Fellowship (2012)

Graduate Committee Service

Chanda Drennen (Ph.D.) – biology effects on sediment stability and erosion resistance (*current*)
Sarah Keenan (Ph.D.) – geochemistry of vertebrate bone taphonomy (*current*)
Brendan Headd (Ph.D.) – genomic analysis of mat formers in sulfur springs (*current*)
Latisha Brengman (Ph.D.) – geochemistry of banded iron formations (*current*)
Melissa Hage (Ph.D.) – geochemistry of banded iron formations (*current*)
Rene Shroat-Lewis (Ph.D.) – Paleocology of edrioasteroid hardground surfaces (defended 2011)
Phillip Derryberry (M.S.) – Structure of the Pulaski Fault (defended 2011)
James Kocis (M.S.) – paleoclimate information from paleosols and river terraces (defended 2011)
Eric Hogan (M.S.) – Stratigraphy of Great Basin Cambrian/PC boundary succession (defended 2010)
Tabbatha Cavendish (M.S.) – New Zealand gulf organic matter (defended 2008)
Laura Lieberman (M.S.) – Sediment grain size and organic carbon sequestration (defended 2007)
Jonathan Evenick (Ph.D.) – Residual mapping of blind structures, TN, KY, VA (defended 2006)
Melissa Hage (M.S.) – Geochemistry of microbial mats, Antarctic Lakes (defended 2006)
Meg Howard (M.S.) – Geochemistry of soil organic matter, Antarctica (defended 2005)
Cara Mulcahy (M.S.) – Experimental stability of Nesquehonite (defended 2005)
Neil Whitmer (M.S.) – Structure and analysis of Sevier Basin (defended 2005)
John Bultman (M.S.) – Bays Mountain synclinorium, TN (defended 2005)
Jennie Cook (M.S.) – Deformation mechanisms in folded quartz sandstones (defended 2005)
Ryan Thigpen (M.S.) – Stratigraphy and structure of the Ocoee Supergroup (defended 2005)
Mike DeAngelis (M.S.) – Experimental alteration of dolomites (defended 2005)
Joel Luckow (M.S.) – Seismic study of the Kuban Basin, Russia (defended 2003)
Eric Ober (M.S.) – Pennsylvanian paleosols/coal underclays (defended 2003)

Co-Advisees (State University of West Georgia)

Alice Stagner (B.S.) – Deciphering the origin of “vermicular structures”, West Africa (2004)
Jules McWilliams (B.S.) – Chemostratigraphy of the Revet Formation, Southern Urals (2002)
Bryn McInnish (B.S.) – Stromatolite architecture in the Greenhorn Formation, NWT, Canada (2002)

11. Other Professional Activities

Professional Memberships

Member, Geological Society of America (1990-present)
Member, Society for Economic Paleontologists and Mineralogists (1990-present)
Member, American Geophysical Union (1990-present)

Professional Memberships (continued)

Member, Association of Women Geoscientists (1993-present)
Member, Sigma Xi (1993-present)
Member, National Association of Geoscience teachers (1999-present)

Professional Service Activities

Secretary-Treasurer, Geological Society of America, Sedimentary Geology Division (2009-present)
Award Evaluator, GSA Steven Laubach awards for Structural Diagenesis (2010-present)
Associate Editor, Sedimentology (2006-2007)
Participant: Sino-US Collaborative Research Panel on Critical Transitions in the History of Life (2007)
Panel Participant (NSF Postdoctoral Fellows, 2000; NSF Earth Sciences, 2006; NASA Exobiology, 2008)
Technical Program co-chair, SE GSA in Knoxville, TN (2006)
Volunteer Coordinator, SE GSA in Knoxville, TN (2006)
Joint Technical Program Committee, Sedimentology Division, GSA (2004-2007)
Proposal Reviewer (NSF Earth Sciences, POWRE, and CAREER programs, NASA Exobiology, Russian Academy of Sciences, Swiss National Science Foundation, NSERC, ORAU/NASA Postdoctoral Fellowships)
Manuscript Reviewer (Nature, Science, Sedimentology, Palaios, Journal of Sedimentary Research, Precambrian Research, Geology, Geobiology, Geochimica et Cosmochimica Acta, Basin Research, Geological Magazine, Canadian Journal of Earth Science, Astrobiology, Journal of Asian Earth Sciences, SEPM Special Publication series, IAS Special Publication series)
Session Chair, GSA Annual and Regional Meetings (1992, 1994, 2004, 2006)
Participant, IGCP projects: 447 (Molar-tooth carbonates); 440 (Rodinia assembly and breakup); 380 (Biosedimentology of microbial buildups)
Participant, NAGT-NSF Early career geoscience faculty teaching workshop (1999)

University Service Activities

Natural Sciences Curriculum Committee (2006-2008; chair 2008-2012)
Faculty of Arts and Sciences, Academic Advising Staff (2000-2004; 2006-2009)
Departmental Liaison to UT Honor's College (2001-2006)
Faculty Member, Student Judicial Affairs Academic Review Board (2002-2004)
Faculty Participant, Honor's College recruiting (2001-2002)
Graduate Student Mentoring Panel (2001)

Department Service Activities

Swingle Award Committee (2013-present)
Isotope Geochemistry Faculty Search Committee (2012-2013)
Departmental Coordinator, Klepser Seminar Series (2011)
Departmental Undergraduate Advisor (2003-2010)
Field Camp Advisor (2003-2005)
Undergraduate Program Committee (2000-2010), Chair (2003-2010)
Departmental Curriculum Committee (2005-present)
Chair, Isotope Geochemistry Faculty Search Committee (2010-2011)
Environmental Geochemistry Faculty Search Committee (2010-2011)
EPS Department Head Search Committee (2008-2009)
Discretionary Funds Committee (2005-2008)
How to get an Academic Appointment; a Mentoring program for Ph.D students (2007)
Environmental Geochemistry Faculty Search Committee (2005-2006)
Sedimentology Faculty Search Committee (2004-2005)

Faculty Peer Teaching Review Committee (2005, 2006)
Graduate Admissions Committee (2002)
Graduate Recruiting (2001-2006)
Faculty Attendant, microscopes (2000-2003)
Faculty Attendant, rock prep (2002-present)
Faculty Liaison, ExxonMobil Recruiting (2002-2005)

Community Outreach

O'Connor Center, continuing education instruction (2011)
Farragut Primary School, "Inuit culture" (2010), "The Rock Cycle" (2011), "Mars in 3D" (2013)
Constructed "Astrobiology" powerpoint and i-movies for high-school kids, Cordoba, Argentina (2009)
Designer and Activity Participant, "Earth's Timeline", Earth Science Day (2002-2011)
Preschool/Afterschool Science Outreach – Morningstar Child Development Center (2007-2011)
Summer Science Camp – Morningstar Child Development Center (2012, 2013)
Activity Director, "Picture This", Tennessee Science Olympiad (2009-2010)
Activity Director, "Write it, Do it", Tennessee Science Olympiad (2000-2007; 2011)
Activity Director, "Science Clue", Tennessee Science Olympiad (2001)

12. Media Coverage of Research Activities

Coverage of Kah et al. (2004) Nature paper on the oxygenation of the Earth's biosphere:

- <http://www.sciencedaily.com/releases/2004/10/041025115640.htm> (news outlet)
- <http://www.spacedaily.com/news/early-earth-04o.html> (news outlet)
- <http://www.newswise.com/articles/tracking-ancient-earths-oxygen-levels-provides-backdrop-forevolution> (news outlet)

Comment by Kah (2010) on potential for the preservation of life on Mars

- <http://www.newscientist.com/article/dn18838-common-mars-rock-can-preserve-microfossils-afterall.html> (news outlet)

Television feature of postdoc Fernando Gomez on collaborative work done while at UT

- <http://www.youtube.com/watch?v=YPr3f1kWWSc&feature=relmfu> (Part 1, Television research profile, beginning in minute 5:15)
- <http://www.youtube.com/watch?v=LvVWVhbGwva4&feature=relmfu> (Part 2, Television profile)
- <http://www.hoylauniversidad.unc.edu.ar/2011/agosto/un-lugar-para-estudiar-la-tierra-primitiva> (University article release)

Coverage of Kah participation (2011) in Mars Science Laboratory mission

- <http://www.wate.com/story/16047500/ut-professor-prepares-for-mars-mission?clienttype=printable> (local TV news; November 2011)
- http://wuot.org/mt/archives/2012_08.html (WUOT, NPR - All Things Considered; November 2011, March 2012, August 2012; August 2013)
- Knoxville News Sentinel – January 2, 2012 (print newspaper)
- <http://www.utk.edu/tntoday/2011/12/02/scientists-search-potential-habitats-mars/> (UT press release, August 2012)
- <http://www.bbc.co.uk/programmes/b00psvgw> (BBC Radio 5 Live, Tony Livesey Show, February 2013)
- <http://www.wate.com/story/21611542/ut-professor-part-of-nasa-team-to-make-major-discovery-on-mars> (local TV news; March 2013)
- <http://skepticallyspeaking.ca/episodes> (Canadian science broadcasting show, with more than 25

affiliate stations and on-line podcasts; March 2013)

- <http://www.wuot.org/h/news/Dialogue.html> (WUOT, Local NPR call-in show; May 2013)

Profile of Kah's research on Paleozoic carbon-sulfur cycling

- Research Media, Ltd. < <http://www.research-europe.com/> >