

**GWENDOLYN L. MACPHERSON**  
**Curriculum Vitae**  
April 4, 2014

**Personal Information**

Associate Professor  
Geology  
University of Kansas  
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**Education**

Ph.D., Geology, 1989  
The University of Texas at Austin, TX

M.A., Geology, 1982  
The University of Texas at Austin, TX

B.S., *magna cum laude*, Geology, 1975  
Syracuse University, Syracuse, NY

**Employment History**

Academic

University of Kansas, Lawrence, KS  
Associate Professor, July 1995 - Present  
Assistant Professor, November 1989 - July 1995  
Acting Assistant Professor, January 1989 - November 1989

University of Pittsburgh, Pittsburgh, PA  
Visiting Research Associate Professor, June 2012 - December 2012

The University of Texas at Austin, TX  
Research Fellow, September 1984 - September 1988  
Teaching Assistant, September 1982 - July 1984  
Research Scientist Associate, Bureau of Economic Geology, January 1981 - September 1982  
Research Scientist Assistant, Bureau of Economic Geology, June 1979 - January 1981  
Research Scientist Assistant, Bureau of Economic Geology, June 1975 - March 1976

**Honors/Awards/Honor Societies**

Individual Honors/Awards

Certificate of Recognition, International Association of GeoChemistry, June 2013

Leo M. and Robert M. Orth Water Resources Award (2010)  
 Instructional Development & Support for Course Re-Design (\$500) (Fall 2009)  
 Support for web-based course, GEOL 302, Oceanography  
 University of Kansas College of Liberal Arts and Sciences award for development of web-based  
 course, GEOL 302, Oceanography, (\$5000) (Summer 2009)  
 Leo M. and Robert M. Orth Water Resources Award (2007)

## Research Key Words

Groundwater inorganic elemental and isotopic geochemistry; Water-rock interaction; Origins of nitrate in groundwater; Origins of isotopes and major and trace elements in formation waters (deep basin/oil & gas field fluids); Groundwater and the global carbon cycle; Groundwater CO<sub>2</sub> annual and long-term cycles; Carbonate-mineral weathering; Sustainable water resources; Groundwater resources in arid regions; Longevity and hydrogeology of ancient groundwater production structures: karez, qanat, etc.

## Research/Scholarly Work

### Publications

#### Reviewed/Refereed

##### Book Chapters

Gray, L. J., G. L. Macpherson, J. K. Koelliker, and W. K. Dodds. "Chapter 11, Hydrology and aquatic chemistry." In *Grassland Dynamics - Long-Term Ecological Research in Tallgrass Prairie*, edited by A. K. Knapp, J. M. Briggs, and S. L. Collins, 159-176. Oxford, United Kingdom: Oxford University Press, 1998.

Macpherson, G. L., and M. A. Townsend. "Chapter 5, Water chemistry and sustainable yield." In *Perspectives on Sustainable Development of Water Resources in Kansas, Bulletin, 239*, 117-157. Kansas Geological Survey, 1998.

Sharp, J. M., Jr., W. E. Galloway, L. S. Land, E. F. McBride, P. E. Blanchard, D. P. Bodner, S. P. Dutton, M. R. Farr, P. B. Gold, T. J. Jackson, P. D. Lundegard, G. L. Macpherson, and K. L. Milliken. "Diagenetic Processes in Northwestern Gulf of Mexico Sediments." In *Diagenesis II: Developments in Sedimentology 43*, edited by G. V. Chilingarian and K. A. Wolf, 43-113. New York: Elsevier, 1988.

##### Journal Articles

Liu, Huan, and G. L. Macpherson. "Sources of inorganic carbon in a stream, Konza Long-Term Ecological Research Site, USA." *Journal of Hydrology* (Elsevier). In progress.

Macpherson, G. L., Thai T. Phan, Stewart Brian W., and Schroeder Karl. "Determination of lithium isotopes in saline fluids using MC-ICP-MS." *Journal of Applied Atomic Spectroscopy*. In progress.

Macpherson, G. L., Rosemary C. Capo, Brian W. Steward, Thai T. Phan, Karl Schroeder, and Richard W. Hammack. "Temperature-dependent Li isotope ratios in Appalachian Plateau and Gulf Coast Sedimentary Basin saline water." *Geofluids* in press (2014). In review. Date

Submitted: March 31, 2014

- Macpherson, G. L., W. C. Johnson, and Huan Liu. "Viability of karezes (ancient water supply systems in Afghanistan) in a changing world." *Advances in Water Science*. In progress.
- Macpherson, G. L., Karen S. Lechtenberg, and B. L. Huff. "Low velocity shallow stream-flow measurement and stream CO<sub>2</sub> emission calculations, Konza Prairie LTER Site, northeastern Kansas, USA." *Hydrological Processes*. In review. Date Submitted: April 4, 2014
- Macpherson, G. L. "Lithium in fluids from Paleozoic-aged reservoirs, Appalachian Plateau region, USA." *Applied Geochemistry* Special Issue: Shale Gas Geochemistry. In review. Date Submitted: March 31, 2014
- Liu, Huan, Zaihua Liu, G. L. Macpherson, Rui Yang, Bo Chen, and Hailong Sun. "Diel geochemical variations in a karst spring and two ponds, Maolan karst experimental site, China: spatiotemporal differences and the biological effects." *Chemical Geology*. In review.
- Tsy-pin, M., and G. L. Macpherson. "The effect of precipitation events on inorganic carbon in soil and shallow groundwater, Konza Prairie LTER Site, NE Kansas, USA." *Applied Geochemistry* 27, no. 12 (2012): 2356-2369. doi:10/1016/j.apgeochem.2012.07.008.
- Macpherson, G. L., and Young-Jin Lee. "Group-examination improves learning for low-achieving students." *Journal of Geoscience Education* 59 (2011): 41-45. doi:10.5408/1.3543930.
- Steward, D. R., X. Yang, S. Y. Lauwo, A. Staggenborg, G. L. Macpherson, and S. M. Welch. "From precipitation to groundwater baseflow in a native prairie ecosystem - A regional study of the Konza LTER in the Flint Hills of Kansas, U.S.A." *Hydrology and Earth System Sciences Discussion Papers* 8 (2011): 4195-4228.
- Suarez, C., G. L. Macpherson, L. González, and D. E. Grandstaff. "Heterogeneous rare earth element (REE) patterns and concentrations in a fossil bone: implications for the use of REE in vertebrate taphonomy and fossilization history." *Geochimica et Cosmochimica Acta* 74 (2010): 2970-2988. doi:10.1016/j.gca.2010.02.023.
- Macpherson, G. L. "CO<sub>2</sub> distribution in groundwater and the impact of groundwater extraction on the global C cycle." *Chemical Geology* 264, no. 1-4 (30 June 2009): 328-336. doi:10.1016/j.chemgeo.2009.03.018.  
8th most downloaded article from *Chemical Geology*, April – June 2009.
- Macpherson, G. L., J. A. Roberts, J. M. Blair, M. A. Townsend, D. A. Fowle, and K. R. Beisner. "Increasing shallow groundwater CO<sub>2</sub> and limestone weathering, Konza Prairie, USA." *Geochimica et Cosmochimica Acta* 72, no. 23 (1 December 2008): 5581-5599. doi:10.1016/j.gca.2008.09.004.  
6th most downloaded article from *Geochimica et Cosmochimica Acta*, October – December 2008
- Johnson, William C., Karen L. Wiley, and G. L. Macpherson. "Carbon isotope variation in modern soils of the tallgrass prairie - analogues for the interpretation of isotopic records derived from paleosols." *Quaternary International* 162-3 (2007): 3-20.

- Walton, A. W., P. Schiffman, and G. L. Macpherson. "Alteration of hyaloclastites in the HSDP 2 Phase 1 Drill Core: 2. Mass balance of the conversion of sideromelane to palagonite and chabazite." *Geochemistry Geophysics Geosystems* 6 (2005).  
Art. No. Q09G19 SEP 10 2005.
- Wood, Heather K., and G. L. Macpherson. "Sources of Sr and implications for weathering of limestone under tallgrass prairie, northeastern Kansas." *Applied Geochemistry* 20, no. 2 (2005): 2325-2342. doi:10.1016/j.apgeochem.2005.08.002.
- Macpherson, G. L., and Marios Sophocleous. "Fast ground water mixing and basal recharge in an unconfined alluvial aquifer, Konza LTER Site, northeastern Kansas, USA." *Journal of Hydrology* 286, no. 1-4 (2004): 271-299.
- Marquette, Geneviève C., James T. Gray, John C. Gosse, François Courchesne, Lisa Stockli, G. Macpherson, and Robert Finkel. "Felsenmeer persistence under non-erosive ice in the Torngat and Kaumajet mountains, Quebec and Labrador, as determined by soil weathering and cosmogenic nuclide exposure dating." *Canadian Journal of Earth Sciences* 41 (2004): 19-38.
- Roberts, J. A., P. C. Bennett, L. A. González, G. L. Macpherson, and K. L. Milliken. "Microbial precipitation of dolomite in methanogenic groundwater." *Geology* 32, no. 4 (2004): 277-280.
- Macpherson, G. L. "Hydrogeology of thin-bedded limestones - the Konza Prairie LTER site, northeastern Kansas." *Journal of Hydrology* 186, no. 1-4 (1996): 191-229.
- Hanor, J. S., L. S. Land, and G. L. Macpherson. "Carboxylic acid anions in formation waters, San Joaquin Basin and Louisiana Gulf Coast, U.S.A.--Implications for clastic diagenesis: Critical Comment." *Applied Geochemistry* 8, no. 3 (1993): 305-307.
- Land, L. S., and G. L. Macpherson. "Geothermometry from saline brine analyses—Lessons from the Texas Gulf Coast." *Applied Geochemistry* 7, no. 4 (1992): 333-340.
- Land, L. S., and G. L. Macpherson. "Origin of saline formation waters, Cenozoic section, Gulf of Mexico sedimentary basin." *Bulletin, American Association of Petroleum Geologists* 76, no. 9 (1992): 1344-1362.
- Macpherson, G. L. "Regional variations in formation-water chemistry, Gulf of Mexico Sedimentary Basin - Major and minor elements, Frio Formation fluids, Texas." *Bulletin, American Association of Petroleum Geologists* 76, no. 5 (1992): 740-757.
- Land, L. S., and G. L. Macpherson. "Geochemistry of formation waters, Plio-Pleistocene reservoirs, offshore Louisiana." *Gulf Coast Association of Geological Societies Transactions* 39 (1989): 421-430.
- Land, L. S., G. L. Macpherson, and L. E. Mack. "The geochemistry of formation waters, Lower Miocene, off-shore Louisiana." *Gulf Coast Association of Geological Societies Transactions* 38 (1988): 503-511.
- Fogg, G. E., W. R. Kaiser, M. L. Ambrose, and G. L. Macpherson. "Regional aquifer characterization for deep-basin lignite mining, Sabine Uplift area, northeast Texas." *University of Texas Bureau of Economic Geology, Geological Circular* 83, no. 3 (1983): 30

pp.

Macpherson, G. L. "Regional trends in transmissivity and hydraulic conductivity, Lower Cretaceous sands, North-Central Texas." *Ground Water* 21, no. 5 (1983): 577-583.

### Book Reviews

Macpherson, G. L. Review of the book *The Deep*, by Claire Nouvian. *Palaios* (2008). doi:10.2110/palo.2008.BR36.

Macpherson, G. L. Review of the book *Water and the Environment*, by Vandas et al.. *Palaios* (2008). doi:10.2110/palo.2008.BR41.

Macpherson, G. L. Review of the book *Ground Water Geochemistry - Fundamentals and Applications to Contamination*, William J. Deutsch. *Ground Water* 36, no. 3 (1998): 392-393.

Macpherson, G. L. Review of the book *Solute Modeling in Catchment Systems*, Stephen T. Trudgill, Ed.. *Computers and Geosciences* (December 1996).

### Conference Proceedings

Macpherson, G. L. "Groundwater CO<sub>2</sub>: Is it responding to atmospheric CO<sub>2</sub>?" In Vol. II, *Proceedings of the 24th International Applied Geochemistry Symposium (IAGS)*, Fredericton, New Brunswick, Canada, June 1-4, 2009, 995-998. 2009.

Macpherson, G. L. "Field vs. lab pH in remote wells, Konza Prairie LTER site, and implications for limestone weathering." In *Proceedings, 11th International Water-Rock Interaction Conference, June 27 – July 2, 2004, WRI-11, Saratoga Springs, NY*, 845-848. New York: A. A. Balkema Publishers, 2004.

Macpherson, G. L. "Nitrate loading of shallow ground water, prairie vs. cultivated land, northeastern Kansas, USA." In *Proceedings, WRI-9 (Ninth International Water-Rock Interaction Conference, Taupo, New Zealand, 30 March-3 April, 1998)*, 165-168. 1998.

Macpherson, G. L. "Ground-water chemistry under tallgrass prairie, central Kansas, USA." In *Seventh International Water-Rock Interaction Conference Proceedings*, 809-812. 1992.

Macpherson, G. L., and L. S. Land. "Boron in saline brines, Gulf of Mexico sedimentary basin, USA." In *Sixth International Water-Rock Interaction Conference Proceedings*, 457-460. 1989.

Macpherson, G. L. "Sources of lithium and barium in Gulf of Mexico Basin formation waters." In *Sixth International Water-Rock Interaction Conference Proceedings*, 453-456. 1989.

### Reports

Macpherson, G. L. "Hydrochemistry of the Carrizo Sand and the Wilcox Group in East-Central Texas." In *Geology and ground-water hydrology of deep-basin lignite in the Wilcox Group of East Texas: The University of Texas Bureau of Economic Geology, Special Report*, W. R. Kaiser et al., 100-114. 1986.

Macpherson, G. L. "Hydrology of the East-Central Texas Wilcox Group." In *Geology and ground-water hydrology of deep-basin lignite in the Wilcox Group of East Texas: The University of Texas Bureau of Economic Geology, Special Report*, W. R. Kaiser et al., 71-76. 1986.

### **Non-Reviewed/Refereed**

#### Book Chapters

Macpherson, G. L. "Source(s), fate, and residence time of nitrate in groundwater - A comparison of carbonate and alluvial aquifers." In *Water Research in Kansas, 1993*, 5. 1994.

Macpherson, G. L. "Source(s), fate, and residence time of nitrate in groundwater - A comparison of carbonate and alluvial aquifers." In *Water Research in Kansas, 1992*, 6. 1993.

#### Reports

Johnson, W. C., G. L. Macpherson, and K. L. Willey. "Biochemical signatures within soils of the Konza Tallgrass Prairie LTER site." In *American Quaternary Association Guidebook*, compiled by R. Mandel, 2/3 - 2/7. Kansas Geological Survey Open-file Report, 2004-33. 2004.

Bohling, G. C., C. D. McElwee, J. J. Butler Jr., M. Orcutt, and G. L. Macpherson. *GEMSTRACI-an induced gradient tracer test in an alluvial sand and gravel aquifer*. 20. Kansas Geological Survey Open File Report 95-80. 1995.

McElwee, C. D., J. J. Butler Jr., G. L. Macpherson, G. C. Bohling, R. D. Miller, C. M. Mennicke, T. Huettl, M. Zenner, Z. Hyder, W. Lue, M. Orcutt, M. L. Beilfuss, and S. Gonuguntla. *Characterization of heterogeneities controlling transport and fate of pollutants in unconsolidated sand and gravel aquifers - Final report to the Department of Defense*. Kansas Geological Survey Open-File Report 95-16. 1995.

Macpherson, G. L., and M. K. Schulmeister. "Source(s), fate and residence time of nitrate at two sites in Kansas - a comparison of carbonate and alluvial aquifers." In *Kansas Water Resources Research Institute Report, Contribution No. 312*, 81. 1994.

Macpherson, G. L. "Preliminary assessment of nitrate at two sites in Kansas - comparison of alluvial aquifer and fractured limestone." In *Kansas Water Resources Research Institute Report, Contribution No. 305*, 39. 1993.

McElwee, C. D., J. J. Butler Jr., G. L. Macpherson, G. C. Bohling, R. D. Miller, C. M. Mennicke, T. Heuttl, M. Zenner, Z. Hyder, W. Leu, and M. Orcutt. "Characterization of heterogeneities controlling transport and fate of pollutants in unconsolidated sand and gravel aquifers: Second Year Report." In *Report to the U. S. Department of Defense, published as Kansas Geological Survey Open-file Report 93-21*. 1993.

McElwee, C. D., J. J. Butler Jr., G. L. Macpherson, G. C. Bohling, R. D. Miller, W. Leu, C. M. Mennicke, and Z. Hyder. "Characterization of heterogeneities controlling transport and fate of pollutants in unconsolidated sand and gravel aquifers: First Year Report." In *Report to the U. S. Department of Defense, published as Kansas Geological Survey Open-file Report 92-*

20. 1992.

Macfarlane, P. A., D. O. Whitemore, M. A. Townsend, J. H. Doveton, V. J. Hamilton, W. G. Coyle III, A. Wade, G. L. Macpherson, and R. D. Black. "The Dakota aquifer program - Annual Report, FY 89." In *Kansas Geological Survey Open-File Report 90-27*, 356. 1990.

Macpherson, G. L. "Hydrochemistry of the Carrizo Sand and Wilcox Group in East-Central Texas." In *Evaluating the Geology and Ground-Water Hydrology of the Deep-Basin Lignite in the Wilcox Group of East Texas--Final Report*, compiled by W. R. Kaiser et al., 144-155. University of Texas Bureau of Economic Geology Contract Report. 1984.

Macpherson, G. L. "Hydrology of the East-Central Texas Wilcox Group." In *Evaluating the Geology and Ground-Water Hydrology of the Deep-Basin Lignite in the Wilcox Group of East Texas - Final Report*, W. R. Kaiser et al., 100-105. University of Texas Bureau of Economic Geology Contract Report. 1984.

Woodruff, C. M., Jr., G. L. Macpherson, Christine Gever, S. Christopher Caran, and Ahmed G. El Shazly. "Geothermal potential along the Balcones/Ouachita trend, Central Texas--ongoing assessment and selected case studies, Final Report." In *University of Texas Bureau of Economic Geology Contract Report*, 75. 1984.

Woodruff, C. M., Jr., S. C. Caran, C. Gever, C. D. Henry, G. L. Macpherson, and M. W. McBride. "Geothermal resource assessment for the State of Texas - status of progress, November 1980." In *University of Texas Bureau of Economic Geology, final report prepared for the U.S. Department of Energy, Division of Geothermal Energy, under Contract No. DE-AS07-79ID12057*, 248. 1981.

### **Invited Presentations/Lectures**

Macpherson, G. L. "Burial diagenesis in sedimentary basins, processes and elements mobilized." University of Pittsburgh, PA. March 6, 2013.

Macpherson, G. L. "Lithium Concentrations and Isotope Ratios in Formation Water: Middle Devonian & Upper Devonian (Pennsylvania) and Gulf Coast Sedimentary Basin." West Virginia University Colloquium, Morgantown, WV. December 5, 2012.

Macpherson, G. L., W. C. Johnson, and H. Liu. "Water insecurity in rural Afghanistan." KU Environmental Security Conference, Lawrence, KS. April 2012.

Macpherson, G. L. "Groundwater and the global carbon cycle." Kansas Geological Survey Geohydrology Seminar. December 12, 2009.

Macpherson, G. L. "Groundwater and the global carbon cycle." Seminar, University of Nebraska-Lincoln, Stroh's Lecture, Lincoln, NE. September 25, 2009.

Macpherson, G. L. "Groundwater and the global carbon cycle." Seminar, Kansas State University, Geology Department, Manhattan, KS. September 10, 2009.

Macpherson, G. L. "Groundwater CO<sub>2</sub> - Northeast Kansas and Beyond." Seminar, University of Kansas, Chemical and Petroleum Engineering, Lawrence, KS. February 12, 2008.

- Macpherson, G. L. "Hydrogeology at Konza Prairie LTER Site." Field site presentation and two-page write-up at the National Science Foundation Long-Term-Ecological-Research Program Review Committee. June 2, 2005 - June 3, 2005.
- Macpherson, G. L. "What is weathering and when - seasonal and long-term chemical weathering at the Konza Prairie LTER Site." Seminar, Kansas State University Geology Department, Manhattan, KS. May 11, 2004.
- Macpherson, G. L. "How to Give an Effective Oral or Poster Presentation." University of Kansas, Association for Women Geologists (AWG)/Sigma Gamma Epsilon (SGE) Brown Bag Lunch, Lawrence, KS. October 16, 2002.
- Macpherson, G. L. "Weathering of carbonate phases at Konza Prairie LTER Site - Dependence on imported material." Seminar, Ohio State University, Columbus, OH. January 31, 2002.
- Macpherson, G. L. "ICPMS and Ru measurements - the good, the bad, and the ugly." University of Kansas, Department of Medicinal Chemistry, Lawrence, KS. March 22, 2001.
- Macpherson, G. L. "Dealing with Hostility Toward Women in the Sciences." University of Kansas Chapter, Society of Women Engineers, Lawrence, KS. November 4, 2000.
- Macpherson, G. L. "How to Give an Oral Presentation at a Professional Meeting." Association for Women Geoscientists, Osage Chapter. October 23, 2000.
- Macpherson, G. L. "Chemical weathering." LTER All Scientists' Meeting. August 2, 2000 - August 4, 2000.
- Macpherson, G. L. "Piezometers in watershed studies." LTER All Scientists' Meeting. August 2, 2000 - August 4, 2000.
- Macpherson, G. L. "Dealing with Hostility Toward Women in the Sciences." University of Kansas, WiSE--Women Faculty in Science and Engineering. December 3, 1999.
- Macpherson, G. L., and D. Kamola. "How to Give an Oral Presentation at a Professional Meeting." Association for Women Geoscientists, Osage Chapter. October 14, 1999.
- Macpherson, G. L. "Hydrogeology, Geology and Geomorphology of Konza Prairie." National Science Foundation (NSF) - LTER (Long-term Ecological Research) Site Review. September 1999.
- Macpherson, G. L. "Summary of Research." Seminar, University of Kansas, Department of Geology, Lawrence, KS. August 26, 1999.
- Macpherson, G. L. "Laser Ablation Microprobe ICPMS." Society of Atomic Spectroscopists, University of Kansas Chapter, Lawrence, KS. March 4, 1998.
- Macpherson, G. L. "Inductively-Coupled Mass Spectrometry in the Environmental Sciences." Guest lecture presented to CE 890, Civil Engineering class on Environmental Mass Spectrometry. February 2, 1998.
- Macpherson, G. L. "An Overview (Underview?) of the Hydrogeology of the Konza Prairie LTER



- Site." Seminar, University of Missouri at Columbia, Geology Department, Columbia, MO. September 22, 1995.
- Macpherson, G. L. "Nitrate in Limestone and Alluvial Aquifers, Kansas." Seminar, Kansas State University, Geology Department, Manhattan, KS. March 16, 1995.
- Macpherson, G. L. "Hydrogeology of the Konza Prairie." Seminar, University of Kansas, Department of Geology, Lawrence, KS. November 4, 1993.
- Macpherson, G. L. "Hydrogeology of the Konza Prairie." KU Endowment Association Geology Associates Board Meeting, Lawrence, KS. October 15, 1993.
- Macpherson, G. L. "Symmetry - the cube, octahedron, and dodecahedron and isocahedron." DANCE 340, Introduction to Laban Movement Analysis, Lawrence, KS. September 21, 1993.
- Land, L. S., L. E. Mack, G. L. Macpherson, and K. L. Milliken. "Open-system diagenesis and the loss of provenance signatures - Isotopic and elemental data from sandstones, Frio Formation, South Texas." American Association of Petroleum Geologists, American Association of Petroleum Geologists Annual Meeting Bulletin: AAPG 74: 699. 1990.
- Macpherson, G. L. "Geochemical modeling of Dakota Aquifer Fluids." Seminar, Kansas Geological Survey. December 13, 1990.
- Macpherson, G. L. "Potential sources of lithium, barium, and boron in formation waters of the Gulf Basin." Seminar, Kansas State University, Geology Department, Manhattan, KS. January 30, 1990.
- Macpherson, G. L. "Symmetry - the cube, octahedron, and dodecahedron." University of Kansas, Dance Theory Class, Lawrence, KS. September 21, 1989.
- Macpherson, G. L. "Research Opportunities and Activities in Hydrogeology." Seminar, University of Kansas, Department of Geology, Lawrence, KS. August 31, 1989.
- Macpherson, G. L. "Boron in formation waters, Gulf Coast Sedimentary Basin." Geological Society of America Penrose Conference: Geochemistry of Waters in Deep Sedimentary Basins. March 16, 1987 - March 20, 1987.

### **Presentations/Lectures**

- Johnson, W. C., J. H. Kastens, E. Lee, K. E. Dobbs, and G. L. Macpherson. "Flood Modeling in a region of political instability - a case study of Afghanistan." The 10th International Conference on Military Geosciences: Rebellions and Military Reactions (ICMG), Aviemore, Scotland. June 17, 2013 - June 21, 2013.
- Macpherson, G. L., R. L. Stotler, and W. C. Johnson. "How Vulnerable is Water Supply in Water-Scarce Regions in Times of Military Conflict? Sahel, Sahara, Somalia, Syria, and Yemen." The 10th International Conference on Military Geosciences: Rebellions and Military Reactions (ICMG), Aviemore, Scotland. June 17, 2013 - June 21, 2013.
- Macpherson, G. L., R. C. Capo, B. W. Stewart, T. T. Phan, K. T. Schroeder, and Richard W.

- Hammack. " $\delta^7\text{Li}$  of Saline Water: Northern Appalachian Basin and Gulf Coast Sedimentary Basin, USA." American Association of Petroleum Geologists (AAPG) Annual Meeting, Pittsburgh PA. May 19, 2013 - May 22, 2013.
- Macpherson, G. L. "Fracking in Kansas." Cottey College, EL Chapter of PEO, Kansas City, MO. March 26, 2013.
- Johnson, William C., Jude Kastens, Eunmok Lee, Kevin E. Dobbs, and G. L. Macpherson. "Modeling extreme flood events in Afghanistan." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 44(7). November 2012.
- Macpherson, G. L., R. C. Capo, B. W. Stewart, Thai T. Phan, Karl T. Schroeder, and Richard W. Hammack. "Lithium Concentrations and Isotope Ratios in Produced Water from the Marcellus Formation, Pennsylvania, USA." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 44(7). November 2012.
- Macpherson, G. L., Huan Liu, C. Whisner, and W. C. Johnson. "Is the Kariz Worth Saving? Assessing the Longevity of Ancient Water Supply Systems in Afghanistan." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 44(7). November 2012.
- Phan, Thai T., Rosemary C. Capo, Brian W. Stewart, James B. Gardiner, G. L. Macpherson, J. Alexandra Hakala, and Elizabeth H. Keating. "CO<sub>2</sub> leakage impacts on shallow groundwater: Application of uranium isotope composition to track the origin and mobility of U at a natural analog site, Chimayo, NM." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 44(7). November 2012.
- Stewart, Brian W., Rosemary C. Capo, Elizabeth C. Chapman, Richard W. Hammack, Karl T. Schroeder, Andrew J. Wall, G. L. Macpherson, Thai T. Phan, and James B. Gardiner. "Isotope tracers to identify origin and verify safe disposal of produced water from the Middle Devonian Marcellus Formation, Pennsylvania, USA." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 44(7). November 2012.
- Johnson, W. C., Z. Price, A. R. Mein, K. E. Dobbs, and G. L. Macpherson. "Landscape setting of ancient karez irrigation systems in southern Afghanistan, A remote sensing approach." Society for American Archaeology, 77th Annual Meeting, Memphis, TN. April 18, 2012 - April 22, 2012.
- Macpherson, G. L., W. C. Johnson, Carla Whisner, Kevin Dobbs, and Stephen Egbert. "Karez systems of southern Afghanistan—Adaptation to environmental change." XVIII. International Union for Quaternary Science (INQUA) Congress, Bern, Switzerland. 2011.
- Tsy-pin, M. A., and G. L. Macpherson. "A role of infiltration in redistribution of CO<sub>2</sub> between soil and groundwater: a case study from Konza Prairie, USA." St. Petersburg, Russia. Integrated problems of hydrogeology, proceedings of the scientific conference: 194-196 (in Russian). 2011.
- Johnson, W. C., G. L. Macpherson, K. E. Dobbs, and Alicia Mein. "Ancient kariz groundwater acquisition systems in the context of the southern Afghanistan landscape." Geological Society of America Annual Meeting, GSA Abstracts with Programs: 43(5). October 2011.
- Macpherson, G. L., M. Tsy-pin, J. A. Roberts, and G. B. Ching. "Natural groundwater

- acidification by increasing CO<sub>2</sub>." Geological Society of America Annual Meeting, GSA Abstracts with Programs: Vol. 43, No. 5. October 2011.
- Tsy-pin, M., and G. L. Macpherson. "Dissolved inorganic carbon in shallow groundwater, Konza Prairie, NE Kansas." Geological Society of America Annual Meeting, GSA Abstracts with Programs: Vol. 43, No. 5. October 2011.
- Johnson, W. C., K. E. Dobbs, G. L. Macpherson, and S. L. Egbert. "Karez systems and landscape modeling in southern Afghanistan." 9th International Conference of Military Geoscience. June 2011.
- Macpherson, G. L., Carla Whisner, and W. C. Johnson. "Karez responses to past, present and future climate: The ancient water-supply system is a crucial modern water source." 9th International Conference of Military Geoscience. June 2011.
- Ohmes, K., B. Huff, and G. L. Macpherson. "Investigating Reforestation as a Possible Mechanism for the Increase in Groundwater CO<sub>2</sub> at the Konza Prairie." Osage Chapter of AWG Brown Bag Seminar. 2010.
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- Wolfe, M. R., D. F. Stockli, D. L. Shuster, J. D. Walker, and G. L. Macpherson. "Assessment of the rutile (U-Th)/He thermochronometry on the KTB drill hole, Germany." Biannual Meeting of AGU, EOS Transactions AGU, Fall Meeting: abstract V23C-1549. 2007.
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## Research Funding/Fellowships

### University of Kansas

#### Externally-Funded Grant/Contract

##### Funded

Macpherson, G. L., R. Capo, and B. Stewart. "Support of development of lithium isotope measurement as a tool for tracing deep fluids." NETL-Pittsburgh (June 2012 - Present).  
G. L. Macpherson through R. Capo and B. Stewart, University of Pittsburgh

Blair, J. (Principal), W. K. Dodds (Co-Principal), D. C. Hartnett (Co-Principal), A. Joern (Co-Principal), J. B. Nippert (Co-Principal), and G. L. Macpherson. "Konza Prairie LTER VI: Grassland Dynamics and Long-Term Trajectories of Change (2009-2015)." National Science Foundation, Long-Term Ecological Research Program, \$71,000 (November 1, 2008 - October 1, 2014).

Researcher/Subcontractor: G. L. Macpherson and others.

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Lewis, A. (Principal), C. Adams (Co-Principal), D. Anderson (Co-Principal), E. W. Clowes (Co-Principal), R. Mandel (Co-Principal), M. S. Haufler, J. W. Hoopes, W. C. Johnson, G. L. Macpherson, M. A. Medina, S. T. Rosen, and P. T. Stinson. "FY10 Funding for University of Kansas Research and Educational Support for U.S. Army Programs and Initiatives at Fort Leavenworth, Kansas." U.S. Army Research Office, \$323,056, Submitted December 2010 (January 1, 2011 - December 31, 2012).

Senior Personnel: M. S. Haufler, J. W. Hoopes, W. C. Johnson, G. L. Macpherson, M. A. Medina, S. T. Rosen, P. T. Stinson

Grant amount: \$1,930,000; Research budget: \$648,435; Macpherson's share: \$323,056.

Macpherson, G. L. (Principal). "Acquisition of a HACH Hydromet MS 5 sonde for downhole measurement of unstable parameters in groundwater." Konza Prairie LTER Program, \$8,020 (January 2012 - June 2012).

Lewis, A. (Principal), R. Mandel (Co-Principal), J. E. Dobson (Co-Principal), S. Fawcett (Co-Principal), K. Chauvin (Co-Principal), G. Simpson (Co-Principal), W. Tsutsui (Co-Principal), B. S. Romzek (Co-Principal), P. E. Johnson, T. W. Heilke, J. A. Schultz, P. H. Herlihy, W. C. Johnson, J. W. Hoopes, G. L. Macpherson, P. T. Stinson, G. Bibi, R. Afifi, and M. L. Bird. "University of Kansas Research and Educational Support for U.S. Army Programs and Initiatives at Fort Leavenworth, Kansas." U.S. Army Research Office, \$112,500 (February 15, 2010 - May 31, 2012).

Senior Personnel: P. E. Johnson, T. W. Heilke, J. A. Schultz, P. H. Herlihy, W. C.

Johnson, J. W. Hoopes, G. L. Macpherson, P. T. Stinson, G. Bibi, R. Afifi, and M. L. Bird

Grant amount: \$1,900,000; Macpherson's share: \$112,500

- Blair, J. (Principal), J. M. Briggs (Co-Principal), D. C. Hartnett (Co-Principal), L. C. Johnson (Co-Principal), A. K. Knapp (Co-Principal), and G. L. Macpherson. "LTER V: Long-Term Ecological Research in Tallgrass Prairie - The Konza Prairie LTER Program, 2002-2008." National Science Foundation, Long-Term Ecological Research Program, \$155,703 (November 1, 2002 - October 31, 2008).  
Researcher/Subcontractor: G. L. Macpherson and others  
Grant amount: \$3,980,000; Subcontracts to Macpherson: 2008, \$23,773; 2007, \$23,773; 2006, \$23,773; 2005, \$23,773; 2004, \$23,773; 2003, \$18,419; 2002, \$18,419.
- Johnson, W. C. (Principal), G. L. Macpherson (Co-Principal), and L. Johnson (Co-Principal). "Konza Prairie Biological Station: Vertical Distribution of SOM  $\delta^{13}\text{C}$  Values in Upland Soils from Ungrazed Watersheds with 1-, 2-, 4-, 10-, and 20-Year Burn Frequencies." Konza Biological Station, Kansas State University, \$2,000 (April 1, 2004 - October 30, 2004).
- Johnson, W. C. (Principal) and G. L. Macpherson (Co-Principal). "Relationships of Soil Chemistry and Mineralogy to Cs, Pb and PGE Distribution, and Implications to Erosion Evaluation Methods." US-Army Cold Regions Research and Engineering Laboratory (ERDC-BAA), \$200,000 (April 1, 2002 - March 31, 2004).
- Knapp, A. K. (Principal), J. M. Blair (Co-Principal), J. M. Briggs (Co-Principal), and G. L. Macpherson. "LTER IV: Long-Term Ecological Research in Tallgrass Prairie - The Konza Prairie LTER Program 1996-2002." National Science Foundation-DEB, Long-Term Ecological Research Program, \$92,500 (November 1, 1996 - October 31, 2002).  
Subcontractor/Research: G. L. Macpherson and 31 others  
Grant amount: \$3,360,000; Subcontracts to Macpherson: 2001, \$18,500; 1999, \$18,500; 1998, \$18,500; 1997, \$18,500; 1996, \$18,500
- Macpherson, G. L. (Principal). "PSCARC: Laser ablation microprobe analysis of Precambrian paleosol, Steep Rock, Canada." Proposal to R. Capo, Penn-State Astrobiology Research Center (PSARC), \$3,862 (January 1, 2000 - December 31, 2001).
- Macpherson, G. L. (Principal) and W. C. Johnson (Co-Principal). "Relationships of Soil Chemistry and Mineralogy to Cs, Pb and PGE Distribution - Characterization of Soil Erosion Using Isotope Techniques." US-Army Cold Regions Research and Engineering Laboratory (ERDC-BAA), \$30,000 (April 15, 2001 - September 30, 2001).  
Grant amount: \$25,000, plus supplement of \$5,000.
- Johnson, L. (Principal), J. Blair (Co-Principal), W. K. Dodds (Co-Principal), G. L. Macpherson (Co-Principal), and V. Terwilliger (Co-Principal). "Acquisition of an Isotope Ratio Mass Spectrometer in the Kansas State University-University of Kansas-Creighton University Consortium." National Science Foundation-Instrumentation and Facilities Program, \$257,395 (October 1, 1999 - September 30, 2001).
- Macpherson, G. L. (Principal). "Special project: Coring and installation of new monitoring wells at Konza Prairie N04d watershed." Konza Prairie LTER IV project, Kansas State University, \$10,000 (September 1999 - October 2000).
- Plank, T. A. (Principal) and G. L. Macpherson (Co-Principal). "Establishment of an Inductively Coupled Plasma-Mass Spectrometer Regional Facility for Geochemical Research at the University of Kansas." W. M. Keck Foundation, \$350,000 (July 1, 1995 - December 31, 1998).

Plank, T. A. (Principal), G. L. Macpherson (Co-Principal), R. H. Goldstein (Co-Principal), W. R. Van Schmus (Co-Principal), J. D. Walker (Co-Principal), and L. W. McKenna III (Co-Principal). "Acquisition of an Inductively Coupled Plasma-Mass Spectrometer for Geochemical Research at the University of Kansas." National Science Foundation-EAR, Academic Research Infrastructure Program/Instrumentation, \$175,000 (September 15, 1994 - August 31, 1998).

Knapp, A. K. (Principal), C. M. Tate (Co-Principal), D. C. Hartnett (Co-Principal), D. W. Kaufman (Co-Principal), and G. L. Macpherson. "LTER III: Fire, Grazing and Climatic Interactions in Tallgrass Prairie--Konza Prairie LTER Research Proposal, 1991-1996." National Science Foundation-DEB, Long-Term Ecological Research Program, \$39,900 (November 1, 1991 - October 31, 1996).

Researcher/Subcontractor: G. L. Macpherson and 23 others

Grant amount: \$3,457,313; Subcontract to Macpherson: 1991-2, \$4000; 1992-3, \$6500; 1992-3, \$9040; 1993-4, \$10,180; 1994-5, \$10,180.

Schwab, A. P. (Principal), C. W. Rice (Co-Principal), W. K. Dodds (Co-Principal), M. K. Banks (Co-Principal), G. L. Macpherson (Co-Principal), J. K. Koelliker (Co-Principal), and M. Sophocleous (Co-Principal). "Biotic and Abiotic Factors Controlling Nitrogen Flux in Pristine and Agricultural Subsurface Systems." Proposal to K\*Star for NSF-EPSCOR funding, \$594,884 (August 1, 1992 - July 31, 1995).

Butler, James J., Jr (Principal), C. D. McElwee (Co-Principal), and G. L. Macpherson. "Characterization of Heterogeneities Controlling Transport and Fate of Pollutants in Unconsolidated Sand and Gravel Aquifers." University Research Initiative, Research Initiation Program, Department of Defense, \$600,000, Submitted September 1990 (May 1990 - December 1994).

Contributor: G. L. Macpherson and others.

Macpherson, G. L. (Principal). "Bromide in Formation Water: An Organic Source?" American Chemical Society, Petroleum Research Fund, \$18,000 (September 1, 1992 - August 31, 1994).

Macpherson, G. L. (Principal). "Source(s), Fate, and Residence Time of Nitrate in Ground Water, A Comparison of Carbonate and Alluvial Aquifers—Year 2." Kansas Water Resources Research Institute/U.S. Geological Survey, \$10,314 (April 1, 1993 - March 31, 1994).

Macpherson, G. L. (Principal). "Source(s), Fate, and Residence Time of Nitrate in Ground Water, A Comparison of Carbonate and Alluvial Aquifers." Kansas Water Resources Research Institute/U.S. Geological Survey, \$10,266 (April 1, 1992 - March 31, 1993).

## **Dissertation/Thesis Supervision**

University of Kansas

Dissertation Committee Chair

Christine M. Mennicke, Status: withdrew.

Left before degree. Co-chair J. J. Butler, Jr.

Currently employed by Kansas Dept. of Health & Environment; state regulatory agency

Marcia K. Schulmeister, Status: completed. 2000

Currently employed as faculty at Emporia State University; academia  
 Michael L. Pomes, Status: completed. 1995  
 Co-chair E. M. Thurman  
 Currently employed by Kansas Department of Health & Environment; state regulatory  
 agency

#### Dissertation Committee Member

T. J. Dewane, Ph.D., Geology, Status: in process.  
 Current KU student  
 Bei Huang, Ph.D., Geology, Status: completed. 2011  
 Paul Kenward, Ph.D., Geology, Status: completed. 2011  
 Ezra Kulczycki, Ph.D., Geology, Status: completed. 2010  
 Celina Suarez, Ph.D., Geology, Status: completed. 2010  
 Linda Garinger, Ph.D., Geology, Status: completed. 2008  
 Vionette De Choudens-Sanchez, Ph.D., Geology, Status: completed. 2007  
 Feiyan Chen, Ph.D., C&PE, (non-Geology), Status: completed. 2006  
 Anita Csoma, Ph.D., Geology, Status: completed. 2003  
 Geoff Bohling, Ph.D., Geology, Status: completed. 1999  
 Kathleen J. C. Benison, Ph.D., Geology, Status: completed. 1997  
 Shih-Hsien Wang, Ph.D., C.E., (non-Geology), Status: completed. 1997  
 Tyan-Ming Chu, Ph.D., Geology, Status: completed. 1995  
 Margaret Mills, Ph.D., Geology, Status: completed. 1994  
 P. A. Macfarlane, Ph.D., C.E., (non-Geology), Status: completed. 1993  
 Carlos Roja, Ph.D., C&PE, (non-Geology), Status: completed. 1993

#### Doctoral Examining Committee Member

Rachel Lane, Ph.D., Chemistry

#### Master's Committee Chair

David Meyer, M.S., Status: in process.  
 Co-chair with Dr. R. Stotler; current KU student  
 Carla Whisner, M.S., Status: in process.  
 Current KU student; employed by Golder Associates; consulting  
 Huan Liu, M.S., Status: completed. May 2014  
 Current KU student  
 Misha Tsy-pin, M.S., Status: completed. 2011  
 Currently employed by Exxon Mobil, Russia  
 Kato Tsosie Dee, M.S., Status: completed. 2001  
 Currently employed as project manager at Colorado Mountain College, also attending  
 Colorado School of Mines as Ph.D. student; academia  
 Heather Wood, Status: completed. 2001  
 Currently employed by Tetra Tech EM, Inc.; consulting  
 Liz McVay, M.S., Status: completed. 2000  
 Currently employed by Tetra Tech EM, Inc.; consulting  
 Jessica Kidwell, M.S., Status: completed. 1999  
 Currently employed by Tetra Tech EM, Inc.; consulting  
 Julie Grauer, M.S. (non-thesis), Status: completed. 1998  
 Currently employed by FEMA, Region 7; federal agency  
 Jenney M. Hall, M.S., Status: completed. 1998  
 Received a Ph.D. from Louisiana State University; post-doc, Yale University with K.  
 Turekian; currently independent business

Edwin Lindgren, M.S., Status: completed. 1996  
 Currently employed by Burns & McDonnell Engineering; consulting  
 Mary C. Bitney, M.S. (non-thesis), Status: completed. 1995  
 Formerly employed by KDHE; state agency  
 Martin Smith, M.S., Status: completed. 1995  
 Currently employed; consulting  
 Alan Wade, M.S., Status: completed. 1992  
 Currently self-employed; consulting

#### Master's Committee Member

Breanna Huff, M.S., Geology, Status: in process.  
 Current KU student  
 Angela R. Thompson, M.S., Geology, Status: in process.  
 Current KU student  
 Jordan-Leigh Taylor, M.S., Geology, Status: completed. 2012  
 Ernesto Longoria, M.S., C.E., (non-Geology), Status: completed. 2011  
 Fatma Ouaichoche, M.S., Geology, Status: completed. 2011  
 Melissa Wolfe, M.S., Geology, Status: completed. 2008  
 Terry Blackburn, M.S., Geology, Status: completed. 2006  
 Amanda Wilson, M.S., Geology, Status: completed. 2005  
 Jill Whitmer, M.S., Geology, Status: completed. 2000  
 Baseerat Afrose Siddiqui, M.S., C.E., (non-Geology), Status: completed. 1999  
 Sean Brennan, M.S., Geology, Status: completed. 1999  
 Vicki Christianson, M.S., C.E., (non-Geology), Status: completed. 1998  
 Debby Snodgrass, M.S., C.E., (non-Geology), Status: completed. 1998  
 Jill Fite, M.S., Geology, Status: completed. 1997  
 Kristen L. Stanford, M.S., Geology, Status: completed. 1997  
 Tracy Whitesell, M.S., Geology, Status: completed. 1996  
 Terrance Huettl, M.S., Geology, Status: completed. 1995  
 Sue Hoff, M.S., Geology, Status: completed. 1992  
 Xiasong Jiang, M.S., Geology, Status: completed. 1991  
 Albert J. Robb, III, M.S., Geology, Status: completed. 1991

#### Undergraduate Student Research Advisor

Rachelle Warren, B.S., Status: completed. 2010 - 2012  
 M.S. candidate, Oregon State University, 2012- present  
 Breanna L. Huff, B.S., Honors, Status: completed. 2009  
 MS candidate, KU-geology  
 Karen Ohmes. 2008 - 2009  
 Kimberly R. Kissing Beisner, B.S., Honors, Status: completed. 2006  
 M.S. University of Utah; Currently U.S.G.S. research staff  
 Galen Worthington. 1998 - 1999

### **KU Courses Taught (past five years)**

#### Spring 2014

GEOL 302-52442, Oceanography  
 GEOL 591-65921, Topics in Geology: Aqueous Geochemistry  
 GEOL 791-65925, Advanced Topics in Geology: Aqueous Geochemistry  
 GEOL 791-65929, Advanced Topics in Geology: Analytical Methods, ICP-MS and Laser

GEOL 853-65932, Field&Lab Methods: Chemical Hydrogeology

Fall 2013

GEOL 899-12674, Master's Thesis

Spring 2013

GEOL 302-52619, Oceanography

GEOL 899-52709, Master's Thesis

Fall 2012

GEOL 899-12831, Master's Thesis

Summer 2012

GEOL 899-81369, Master's Thesis

Spring 2012

GEOL 302-52753, Oceanography

GEOL 391-52773, Special Studies in Geology

GEOL 591-69305, Topics in Geology: Aqueous Geochemistry

GEOL 791-69300, Advanced Topics in Geology: Terr Water&the Global C Cycle

GEOL 791-69306, Advanced Topics in Geology: Aqueous Geochemistry

GEOL 853-61228, Field&Lab Methods:Chem Hydrogl

Fall 2011

CE 754-21574, Physical&Transport Hydrogeolgy

CE 754-21649, Physical&Transport Hydrogeolgy

GEOL 751-21573, Physical&Transport Hydrogeolgy

GEOL 851-21572, Field&Lab Methds:Physcl Hydrog

GEOL 891-13036, Special Studies in Geology

GEOL 899-13061, Master's Thesis

Summer 2011

GEOL 899-81412, Master's Thesis

Spring 2011

GEOL 302-53009, Oceanography

GEOL 791-64928, Advanced Topics in Geology: ICP-OES, -MS and Laser ICP-MS

GEOL 899-53101, Master's Thesis

Fall 2010

CE 754-35815, Physical&Transport Hydrogeolgy

GEOL 751-35813, Physical&Transport Hydrogeolgy

GEOL 851-35811, Field&Lab Methds:Physcl Hydrog

GEOL 891-16717, Special Studies in Geology

GEOL 899-16769, Master's Thesis

GEOL 999-16819, Doctoral Dissertation

Summer 2010

GEOL 171-95344, Earthquakes &Natural Disasters

GEOL 899-83073, Master's Thesis



**Spring 2010**

CE 753-78769, Chemical&Microbial Hydrogeolgy  
 GEOL 302-56421, Oceanography  
 GEOL 591-88783, Topics in Geology: Introductory Hydrogeology  
 GEOL 753-77041, Chemical&Microbial Hydrogeolgy  
 GEOL 753-77065, Chemical&Microbial Hydrogeolgy  
 GEOL 853-77075, Field&Lab Methods:Chem Hydrogl  
 GEOL 891-56561, Special Studies in Geology  
 GEOL 899-56605, Master's Thesis

**Fall 2009**

CE 754-41619, Physical&Transport Hydrogeolgy  
 GEOL 399-17157, Senior Honors Research  
 GEOL 751-41615, Physical&Transport Hydrogeolgy  
 GEOL 851-41613, Field&Lab Methds:Physcl Hydrog

**Spring 2009**

CE 753-83456, Chemical&Microbial Hydrogeolgy  
 CE 753-83459, Chemical&Microbial Hydrogeolgy  
 GEOL 302-56899, Oceanography  
 GEOL 753-82400, Chemical&Microbial Hydrogeolgy  
 GEOL 753-82413, Chemical&Microbial Hydrogeolgy  
 GEOL 853-82419, Field&Lab Methods:Chem Hydrogl

**Achievements of Distinction of Current/Former Students**

Kato T. Dee, Geology

Lead concentration in the Morrill 4-6 groundwater monitoring well, 10th Annual Konza Prairie LTER Workshop; G.L. Macpherson, advisor (October 31, 1998)

Breanna Huff, Geology

Investigating Reforestation as a Possible Mechanism for the Increase in Groundwater CO<sub>2</sub> at the Konza Prairie, Senior Honor's Thesis Defense; G.L. Macpherson, advisor (December 17, 2009)

Kimberly R. Kissing

Boron isotope ratios--Linking groundwater chemistry to landscape evolution of natural prairie environments, KU Undergraduate Research Symposium, poster presentation; advisor: G.L. Macpherson (2006)

Kimberly R. Kissing

Short-term water-level fluctuations and long-term water-level decline at the Konza Prairie—drought or vegetation?, Honors Defense oral presentation and paper; advisor: G.L. Macpherson (May 12, 2006)

**University Service**University of Kansas

Co-Chair

Unit Director Review Committee. (Spring 1996)

Member

Faculty Search Committee, Geography. (2007 - 2008)

University Laser Safety Committee. (1998 - 2005)  
Faculty Search Committee, Geography/Atmospheric Science. (2003 - 2004)  
Research Engineer replacement committee, Chemical and Petroleum Engineering  
Department. (January 1999 - December 2000)

Organizer

HIP (Hydrogeology in Progress) Lunchtime Seminar. (Spring 2007)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. (Spring 2006)  
Broadcast of CUASHI cyberseminars. (Fall 2004)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. (Fall 1999)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. (Fall 1998)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. (Fall 1997)

**College Service**

University of Kansas

Chair

Curriculum Changes Subcommittee of CLAS GSC. (2008 - 2010)

Member

CLAS Graduate Studies Committee. (2007 - 2010)  
CLAS Academic Misconduct Hearing Board. (2002 - 2005)

**Department Service**

University of Kansas

Geology

Ad Hoc Member

Academic Misconduct Committee. (Spring 2013)  
Promotion & Tenure Committee. (2007 - 2008)  
Promotion & Tenure Committee. (2003 - 2004)

Chair

Graduate Studies Committee. (2013 - Present)  
Equipment and Facilities Committee, Geology Associates Advisory Board. (2007 - Present)  
Hydrogeology Faculty Search Committee. (2010 - 2011)  
Ad Hoc Committee, Revision of Graduate Hydrogeology Curriculum. (2007 - 2009)  
Search Committee, KU-PAL Lab Manager. (2000 - 2001)  
Undergraduate Studies Committee. (1995 - 2001)

Co-Chair

Equipment and Facilities Committee, Geology Associates Advisory Board. (2003 - 2006)

Coordinator

Undergraduate Honors. (Fall 2007 - Present)  
Undergraduate Research Experience Certification. (Fall 2007 - Present)

Interim Chair

Undergraduate Studies Committee. (Fall 2004)

Member

Department of Geology Executive Committee. (2011 - Present)  
 Department of Geology Graduate Studies Committee. (2009 - Present)  
 Undergraduate Studies Committee. (2004 - 2007)  
 3rd Year Faculty Review Committee. (2003 - 2004)  
 Neotectonics/Landscape Evolution Faculty Search Committee. (2003 - 2004)  
 Graduate Studies Committee. (2002 - 2004)  
 Hydrogeology Faculty Search Committee. (1999 - 2000)  
 Ad Hoc Committee for Department of Geology Review of KGS Director candidates. (Spring 1999)  
 Ad Hoc Committee for Justifying New Faculty Positions. (Spring 1999)

Undergraduate Advisor

Engineering Geology. (2006 - Present)

**Professional Service**

Editorial Responsibilities

International

Editorial Board Member

*Environmental Geology* renamed *Environmental Earth Science*. (January 1999 - Present)

Other Professional Service

International

Convener

International Association of GeoChemistry (IAGC)-Sponsored Session "Groundwater and the Global Carbon Cycle," IAGS Applied Geochemistry Symposium. (June 1, 2009 - June 4, 2009)

Organizer

*Session 66, Soils as the first factor in groundwater chemistry: quantification of the soil signature in groundwater and implications for chemical weathering*, 2005 Goldschmidt Conference. (2005)

Reviewer, Grant Proposal

American Chemical Society - Petroleum Research Fund.  
 Environmental Protection Agency.  
 National Science Foundation - GG.  
 National Science Foundation - Graduate Research Fellowship Program.  
 NSERC (Natural Sciences and Engineering Research Council of Canada).

Reviewer, Manuscript

*AAPG Environmental Geosciences*.  
*Applied Geochemistry*.  
*Bulletin, American Association of Petroleum Geologists*.

*Carbonates and Evaporites.*  
*Compass.*  
*Current Research on Kansas Geology.*  
*Environmental Earth Sciences.*  
*Geochimica et Cosmochimica Acta.*  
*Geology.*  
*Science of the Total Environment.*  
 SEPM Special Publications.

Reviewer, Textbook  
 Prentice-Hall.

Session Chair

*Session 66, Soils as the first factor in groundwater chemistry: quantification of the soil signature in groundwater and implications for chemical weathering*, 2005 Goldschmidt Conference. (2005)

Session Co-Chair

Hydrogeology I Session, Geological Society of America Annual Meeting. (November 7, 1989)

Social Network Coordinator

International Association of GeoChemistry (IAGC) (Facebook) (Fall 2010 - Present)

#### National

Judge

Student oral presentations, North-Central-South Central Geological Society of America. (April 11, 2007)

Member

National Science Foundation Review Panel—Geobiology & Low-Temperature Geochemistry. (November 2009)  
 Kansas Water Resources Research Institute Policy Committee and Executive Committee. (Fall 1991 - 1996)

Reviewer

Eloise Gerry Fellowship, Sigma Delta Epsilon (Graduate Women in Science). (Spring 1996)

#### State

Mentor

Kansas Careers Mentor for young women, (Kansas Careers Mentor Directory). (1993 - Present)

#### Local

Board of Directors

Hidden Valley Site Committee. (2001 - 2003)

Chair

### Hidden Valley Site Committee. (2001 - 2003)

#### Member

Hidden Valley Site Committee. Major project: design and construction of environmentally friendly, universally accessible, composting toilet with solar-powered battery charger for vent fan and interior light (2000 - Present)

### Service Presentations

Macpherson, G. L. "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course. March 26, 2013.

Macpherson, G. L. "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course. September 28, 2011.

Macpherson, G. L. "Rocks Rock." Geology merit badge workshop for ~50 4th-6th grade Girl Scouts, with the Osage Chapter of the Association for Women Geoscientists. May 3, 2011.

Macpherson, G. L. "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course. February 16, 2011.

Macpherson, G. L. "Rocks Rock." Geology merit badge workshop for ~50 4th-6th grade Girl Scouts, with the Osage Chapter of the Association for Women Geoscientists. May 4, 2008.

Macpherson, G. L. "Rocks Rock." Geology merit badge workshop for ~50 4th-6th grade Girl Scouts, with the Osage Chapter of the Association for Women Geoscientists. August 8, 2006.

Macpherson, G. L. "Geology, geography, and culture of New Zealand." 7th grade classes at Central Junior High School—entire day. April 13, 2006.

Macpherson, G. L. "Ground Water!" Pinckney Elementary School fourth grade, two classes, 40 students. November 25, 2002.

Macpherson, G. L. "How to Give an Effective Oral or Poster Presentation." KU AWG/SGE Brown Bag Lunch. October 16, 2002.

Macpherson, G. L. "Dealing with Hostility Toward Women in the Sciences." SWE. November 4, 2000.

Macpherson, G. L., and Ann Becker. "How to Give an Oral Presentation at a Professional Meeting." AWG Meeting. October 23, 2000.

Macpherson, G. L. "Groundwater, for 6th - 9th graders." Workshop, Summer Career Horizons. June 2000.

Macpherson, G. L. "Dealing with Hostility Toward Women in the Sciences." KU-WiSE. December 3, 1999.

Macpherson, G. L., and Diane Kamola. "How to Give an Oral Presentation at a Professional Meeting." AWG Meeting. October 14, 1999.

- Macpherson, G. L. KU Workshop for Minority High School Students, Laser Analysis Science Module. March 26, 1999.
- Macpherson, G. L. "Groundwater, for 6th - 9th graders." Workshop, Summer Career Horizons. June 1998.
- Macpherson, G. L. "Groundwater, for 9th graders." Workshop, Girls to Women. April 1998.
- Macpherson, G. L. "Groundwater, for 6th - 9th graders." Workshop, Summer Career Horizons. June 1997.
- Macpherson, G. L. "Ground-water flow and chemistry." Summer Camp II, Stepping Stones, Inc.. June 11, 1997.
- Macpherson, G. L. "Rocks and minerals." 3rd graders at Pinckney School. September 9, 1996.
- Macpherson, G. L. "Groundwater, for 6th - 9th graders." Workshop, Summer Career Horizons. June 1996.
- Macpherson, G. L. "Soils." Leavenworth Senior Girl Scout Troop. April 18, 1996.
- Macpherson, Gwendolyn L. "The nitrate supply puzzle at the Konza-EPSCoR monitoring site - observations, reflections, and inquiries." Guest lecture and discussion: Dr. V. Terwilliger's GEOG 749 Seminar in gas source stable isotopes in the Natural Sciences. April 4, 1996. (Invited)
- Macpherson, G. L. "Groundwater, for 6th-9th graders." Workshop, Expanding Your Horizons. 1995.
- Macpherson, G. L. "Groundwater, for 6th-9th graders." Workshop, Expanding Your Horizons. 1994.