

## Curriculum Vitae

January 24, 2018

**NAME: Gwendolyn L. Macpherson**

### 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  
Professor, July 2016 - Present  
Associate Professor, July 1995 – June 2016  
Assistant Professor, November 1989 - July 1995  
Courtesy Faculty, Environmental Studies Program  
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

Texas Department of Water Resources, Austin, TX  
Geologist, March 1976 - January 1978

### TEACHING RECORD

#### A. List of KU Courses Taught

University of Kansas  
GEOL 315 Gemstones – Fall 2017 – 20 enrolled – 100% Taught  
GEOL 391 Undergraduate Research - Fall 2017 - 1 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Fall 2017 - 1 Enrolled - 100% Taught  
GEOL 591/791 Advanced Topics in Geology: Aqueous Geochemistry - Spring 2017 - 7  
enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2017 - 40 Enrolled - 100% Taught

GEOL 899 Master's Thesis - Spring 2017 - 1 Enrolled - 100% Taught  
GEOL 891 Graduate Research - Spring 2017 - 2 Enrolled - 100% Taught  
GEOL 391 Undergraduate Research - Spring 2017 - 2 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Hydrogeology Seminar - Fall 2016 - 7 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Fall 2016 - 1 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Analytical Methods, ICP-MS, and LA - Spring 2016 - 6 Enrolled - 100% Taught  
GEOL 791 Intro to Field Methods in Hydrogeology - Spring 2016 - 7 Enrolled - 10% Taught  
GEOL 591/791 Advanced Topics in Geology: Aqueous Geochemistry - Spring 2016 - 5 enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2016 - 40 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Hydrogeology Seminar - Fall 2015 - 4 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Summer 2015 - 1 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Spring 2015 - 1 Enrolled - 100% Taught  
GEOL 591/791 Advanced Topics in Geology: Aqueous Geochemistry - Spring 2015 - 8 enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2015 - 40 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Summer 2014 - 1 Enrolled - 100% Taught  
GEOL 302 Oceanography - Summer 2014 - 25 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Spring 2014 - 2 Enrolled - 100% Taught  
GEOL 853 Field & Lab Methods: Chemical Hydrogeology - Spring 2014 - 2 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Analytical Methods, ICP-MS, and LA - Spring 2014 - 5 Enrolled - 100% Taught  
GEOL 591/791 Advanced Topics in Geology: Aqueous Geochemistry - Spring 2014 - 6 enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2013 - 39 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Fall 2012 - 2 Enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2012 - 50 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Terrestrial Water in the Global Carbon Cycle - Spring 2012 - 7 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Aqueous Geochemistry - Spring 2012 - 9 Enrolled - 100% Taught  
GEOL 853 Field & Lab Methods: Chemical Hydrogeology - Spring 2012 - 4 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Spring 2012 - 2 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Fall 2011 - 2 Enrolled - 100% Taught  
GEOL 891 Special Studies in Geology (Independent Research) - Fall 2011 - 1 Enrolled - 100% Taught  
GEOL 751/CE 754 Physical & Transport Hydrogeology (co-taught) - Fall 2011 - 9 Enrolled - 50% Taught  
GEOL 851 Field & Lab Methods: Physical Hydrogeology - Fall 2011 - 4 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Spring 2011 - 2 Enrolled - 100% Taught  
GEOL 791 Advanced Topics in Geology: Analytical Methods, ICP-OES, ICP-MS, and LA - Spring 2011 - 4 Enrolled - 100% Taught  
GEOL 302 Oceanography - Spring 2011 - 50 Enrolled - 100% Taught  
GEOL 899 Master's Thesis - Fall 2010 - 2 Enrolled - 100% Taught  
GEOL 751/CE 754 Physical & Transport Hydrogeology (co-taught) - Fall 2010 - 4 Enrolled -

50% Taught  
 GEOL 851 Field & Lab Methods: Physical Hydrogeology - Fall 2010 - 3 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Summer 2010 - 2 Enrolled - 100% Taught  
 GEOL 171 Earthquakes & Natural Disasters - Summer 2010 - 22 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 2010 - 2 Enrolled - 100% Taught  
 GEOL 891 Topics in Geology (Stable Isotopes in Hydrogeology) - Spring 2010 - 1 Enrolled - 100% Taught  
 GEOL 853 Field & Lab Methods: Chemical Hydrogeology - Spring 2010 - 5 Enrolled - 100% Taught  
 GEOL/CE 753 Chemical & Microbial Hydrogeology - Spring 2010 - 6 Enrolled - 100% Taught  
 GEOL 591 Special Studies in Geology: Introduction to Hydrogeology (co-taught) - Spring 2010 - 1 Enrolled - 100% Taught  
 GEOL 302 Oceanography (new online course) - Spring 2010 - 52 Enrolled - 100% Taught  
 GEOL 851 Field & Lab Methods: Physical Hydrogeology - Fall 2009 - 5 Enrolled - 100% Taught  
 GEOL 751/CE 754 Physical & Transport Hydrogeology (co-taught) - Fall 2009 - 6 Enrolled - 50% Taught  
 GEOL 399 Senior Honors Research (Independent Study) - Fall 2009 - 1 Enrolled - 100% Taught  
 GEOL 853 Field & Lab Methods: Chemical Hydrogeology - Spring 2009 - 4 Enrolled - 100% Taught  
 GEOL/CE 753 Chemical & Microbial Hydrogeology (co-taught) - Spring 2009 - 13 Enrolled - 50% Taught  
 GEOL 302 Oceanography - Spring 2009 - 127 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Fall 2008 - 1 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Summer 2008 - 1 Enrolled - 100% Taught  
 GEOL 171 Earthquakes & Natural Disasters - Summer 2008 - 20 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques--ICP-MS and LAM-ICP-MS - Spring 2008 - 2 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2008 - 124 Enrolled - 100% Taught  
 GEOL 752 Field & Laboratory Hydrogeology (Field Studies) (co-taught) - Fall 2007 - 6 Enrolled - 33% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques-ICP-MS and LAM-ICP-MS - Spring 2007 - 2 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2007 - 90 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 2006 - 6 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques-ICP-MS and LAM-ICP-MS, section 1 - Spring 2006 - 7 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques-ICP-MS and LAM-ICP-MS, section 2 - Spring 2006 - 4 Enrolled - 100% Taught  
 GEOL 399 Senior Honors Research (Independent Study) - Spring 2006 - 1 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2006 - 129 Enrolled - 100% Taught  
 GEOL 752 Field & Laboratory Hydrogeology (Field Studies) (co-taught) - Fall 2005 - 6 Enrolled - 100% Taught  
 GEOL 552 Introduction to Hydrogeology (co-taught) - Fall 2005 - 14 Enrolled - 33% Taught  
 GEOL 302 Oceanography - Spring 2005 - 102 Enrolled - 100% Taught

GEOL 753/CE 753 Chemical Hydrogeology - Fall 2004 - 5 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Summer 2004 - 1 Enrolled - 100% Taught  
 GEOL 171 Earthquakes & Natural Disasters - Summer 2004 - 34 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques-ICP-MS and LAM-ICP-MS - Spring 2004 - 4 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Spring 2004 - 1 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2004 - 46 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 2003 - 1 Enrolled - 100% Taught  
 GEOL 753/CE 753: Chemical Hydrogeology - Fall 2003 - 3 Enrolled - 100% Taught  
 GEOL 752 Field & Laboratory Hydrogeology (Field Studies) (co-taught) - Fall 2003 - 4 Enrolled - 33% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques-ICP-MS and LAM-ICP-MS - Spring 2003 - 2 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2003 - 24 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 2002 - 1 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 2002 - 3 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study - Environmental Geology) - Fall 2002 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 2002 - 1 Enrolled - 100% Taught  
 GEOL 302 Oceanography - Spring 2002 - 32 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 2001 - 1 Enrolled - 100% Taught  
 GEOL 752 Field Hydrogeology (co-taught) - Fall 2001 - 6 Enrolled - 33% Taught  
 GEOL 899 Master's Thesis - Spring 2001 - 3 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques—ICP-MS and LAM-ICP-MS - Spring 2001 - 4 Enrolled - 100% Taught  
 GEOL 741 Advanced Geomorphology: Chemical Weathering (co-taught) - Spring 2001 - 7 Enrolled - 50% Taught  
 GEOL 351 Environmental Geology - Spring 2001 - 70 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 2000 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 2000 - 3 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 2000 - 5 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Summer 2000 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Summer 2000 - 2 Enrolled - 100% Taught  
 GEOL 171 Earthquakes & Natural Disasters - Summer 2000 - 30 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 2000 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 2000 - 3 Enrolled - 100% Taught  
 GEOL 791 PHREEQC—Geochemical Speciation Modeling - Spring 2000 - 6 Enrolled - 100% Taught  
 GEOL 351 Environmental Geology - Spring 2000 - 74 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 1999 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 1999 - 3 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 1999 - 3 Enrolled - 100% Taught  
 GEOL 752 Field Hydrogeology (co-taught) - Fall 1999 - 6 Enrolled - 33% Taught  
 GEOL 999 Doctoral Dissertation - Summer 1999 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Summer 1999 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 1999 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 1999 - 3 Enrolled - 100% Taught  
 GEOL 351 Environmental Geology - Spring 1999 - 98 Enrolled - 100% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Spring 1999 - 1 Enrolled -

100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 1998 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 1998 - 1 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques—ICP-MS - Fall 1998 - 9 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 1998 - 8 Enrolled - 100% Taught  
 GEOL 752 Field Hydrogeology (co-taught) - Fall 1998 - 6 Enrolled - 50% Taught  
 GEOL 999 Doctoral Dissertation - Summer 1998 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Summer 1998 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 1998 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 1998 - 4 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques—ICP-MS - Spring 1998 - 5 Enrolled - 100% Taught  
 GEOL 351 Environmental Geology - Spring 1998 - 69 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 1997 - 2 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 1997 - 2 Enrolled - 100% Taught  
 CE 890 Advanced Special Problems - Fall 1997 - 1 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 1997 - 7 Enrolled - 100% Taught  
 GEOL 552 Introduction to Hydrogeology (co-taught) - Fall 1997 - 2 Enrolled - 33% Taught  
 GEOL 891 Special Studies in Geology - Summer 1997 - 1 Enrolled - 100% Taught  
 GEOL 399 Senior Honors Research (Independent Study) - Summer 1997 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 1997 - 2 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis (teaching leave, Spring 1997) - Spring 1997 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 1996 - 2 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 1996 - 2 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Techniques—ICP-MS (co-taught) - Fall 1996 - 3 Enrolled - 50% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 1996 - 9 Enrolled - 100% Taught  
 GEOL 552 Introduction to Hydrogeology (co-taught) - Fall 1996 - 17 Enrolled - 33% Taught  
 GEOL 391 Special Studies in Geology (Independent Study) - Fall 1996 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 1996 - 1 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Spring 1996 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Spring 1996 - 1 Enrolled - 100% Taught  
 GEOL 791 Advanced Topics in Geology: Analytical Methods, AAS, Spectrophotometry, & Ion Chromatography - Spring 1996 - 5 Enrolled - 100% Taught  
 GEOL 351 Environmental Geology - Spring 1996 - 100 Enrolled - 100% Taught  
 GEOL 999 Doctoral Dissertation - Fall 1995 - 1 Enrolled - 100% Taught  
 GEOL 899 Master's Thesis - Fall 1995 - 1 Enrolled - 100% Taught  
 GEOL 753/CE 753 Chemical Hydrogeology - Fall 1995 - 3 Enrolled - 100% Taught  
 GEOL 552 Introduction to Hydrogeology (co-taught) - Fall 1995 - 9 Enrolled - 33% Taught  
*Promotion to associate professor, July 1995*

## B. Undergraduate Advising Record

University of Kansas

Undergraduate Student Research Advisor  
 Chantelle Davis, B.S. Geology, 2019

Amy Peacock, B.S., Geology, 2017  
Tess Lydick, B.S., Geology, 2017  
Kathryn Pamperin, B.S. Geology, 2017  
Matt Broadbent, B.S., Geology, 2017  
Rachelle Warren, B.S., Geology, 2010 - 2012  
    Status: M.S. candidate, Oregon State University, 2012- present  
Karen Ohmes Lechtenberg, 2008 - 2009  
    Status: industry (M.S., University of Kansas, 2012; 12/2012, Encana Corporation)  
Breanna L. Huff, B.S., Geology, Honors, Fall 2008 - Spring 2009  
    Status: industry  
Kimberly R. Kissing Beisner, B.S., Geology, Honors, 2006  
    Status: government research (M.S. University of Utah; currently U.S.G.S. research staff)  
Galen Worthington, 1998 - 1999

### **C. Graduate and Postgraduate Advising Record**

#### **Doctoral/Dissertation Committee Chair**

##### *Dissertation Committee Chair*

Michael Robbins, Ph.D., Geology, Fall 2009 - Fall 2010  
    Status: voluntary withdrawal; industry  
Marcia K. Schulmeister, Ph.D., Geology, 2000  
    Status: academia (faculty at Emporia State University)

##### *Dissertation Committee Co-Chair*

Michael L. Pomes, Ph.D., Geology, 1995  
    Status: government (regulatory agency, KDHE, Topeka KS)  
Margaret Mills, Ph.D., Geology, 1994  
Christine M. Mennicke, Ph.D., Geology, Fall 1992 - Spring 1994  
    Status: government (regulatory agency, KDHE, Topeka KS)

#### **Master's Committee Chair**

##### *Master's Committee Chair*

Stacy Hendricks, Fall 2016 - Present  
Emily Yntema, Fall 2016 - Present  
Brock Norwood, Fall 2014 - Present  
Michael Rawitch, M.S., Geology, August 2013 – January 2016  
    Status: industry (consulting, Environ)  
Huan Liu, M.S., Geology, Fall 2011 - Fall 2014  
    Status: Fall, 2015, Ph.D. student, Hong Kong University  
Carla Whisner, M.S., Geology, Fall 2009 - Fall 2014  
    Status: industry (consulting: 4/2011 - 5/2013 Golders Associates; Vancouver, BC, Canada;  
    4/2015 Terracon, Columbus OH)  
Mikhail Tsy-pin, M.S., Geology, Fall 2009 - Summer 2011  
    Status: industry (9/2011, Exxon Mobil, Russia)  
Kato Tsosie Dee, M.S., Geology, 2001  
    Status: academia (project manager at Colorado Mountain College; Ph.D., Colorado School of Mines, 2015)

Heather Wood, M.S., Geology, 2001  
Status: industry (consulting, Tetra Tech EM, Inc.)  
S. Lizabeth McVay, M.S., Geology, 2000  
Status: industry (consulting, Tetra Tech EM, Inc.)  
Jessica Purseley Kidwell, M.S., Geology, 1999  
Status: industry (consulting, Tetra Tech EM, Inc.)  
Julie Grauer, M.S., Geology (non-thesis), 1998  
Status: government (federal agency, FEMA, Region 7)  
Jenney M. Hall, M.S., Geology, 1998  
Status: academia (Ph.D., Louisiana State University; post-doc, Yale University with  
K. Turekian; faculty at Santa Monica College)  
Edwin Lindgren, M.S., Geology, 1996  
Status: industry (consulting, Burns & McDonnell Engineering)  
Mary C. Bitney, M.S., Geology (non-thesis), 1995  
Status: government (environmental geologist, Altus Air Force Base OK)  
Martin Smith, M.S., Geology, 1995  
Status: industry (consulting)  
Alan Wade, M.S., Geology, 1992  
Status: industry (consulting, self-employed)  
Daniel Inman, Fall 1989 - December 1990  
Status: industry (consulting)

*Master's Committee Co-Chair*

David Meyer, M.S., Geology, August 2012 - Present  
Status: government (regulatory agency, KDHE, Topeka KS)

**Other Graduate Committee Service**

*Dissertation Committee Member*

Sirwan Alimoradi, Environmental Engineering, Spring 2017 – present.  
Arkan Dhari Jalal, Ph.D., Environmental Engineering, August 2016 (examining  
committee)  
Aoesta Mohamed, Ph.D., Geography, August 2012 - February 2015  
Bei Huang, Ph.D., Geology, 2011  
Paul Kenward, Ph.D., Geology, 2011  
Ezra Kulczycki, Ph.D., Geology, 2010  
Celina Suarez, Ph.D., Geology, Fall 2005 - Spring 2010  
Status: academia (8/2010, Assistant Professor, University of Arkansas)  
Linda Pickett, Ph.D., Geology, 2008  
Status: academia (faculty at University of Nebraska, Lincoln)  
Vionette De Choudens-Sanchez, Ph.D., Geology, 2007  
Feiyan Chen, Ph.D., Chemical and Petroleum Engineering, 2006  
Anita Csoma, Ph.D., Geology, 2003  
Status: industry (ConocoPhillips)  
Geoff Bohling, Ph.D., Geology, 1999  
Status: government (research, Kansas Geological Survey)  
Kathleen J. C. Benison, Ph.D., Geology, 1997  
Status: academia (faculty, University of West Virginia)  
Shih-Hsien Wang, Ph.D., Civil and Environmental Engineering, 1997  
Tyan-Ming Chu, Ph.D., Geology, 1995  
P. A. Macfarlane, Ph.D., Civil and Environmental Engineering, 1993

Carlos Roja, Ph.D., Civil and Environmental Engineering, 1993

*Doctoral Examining Committee Member*

Rachel Lane, Ph.D., Chemistry, Spring 2011 - Fall 2011

*Master's Committee Member*

Breanna Huff, M.S., Geology, Fall 2010 – Summer 2014

Status: industry

Angela R. Thompson, M.S., Geology, Fall 2012 - Summer 2014

Status: government (8/2014, KDHE, Topeka KS)

Jordan-Leigh Taylor, M.S., Geology, 2012

Status: industry

Ernesto Longoria, M.S., Civil and Environmental Engineering, 2011

Fatma Ouaichoche, M.S., Geology, 2011

Melissa Wolfe, M.S., Geology, 2008

Terrence Blackburn, M.S., Geology, 2006

Status: academia (Ph.D., MIT; faculty at University of California, Santa Cruz, 2013)

Amanda Wilson, M.S., Geology, 2005

Leah MacNeill, 1997 - 2004

Jill Whitmer Johnson, M.S., Geology, 2000

Status: industry (consulting, GeoSyntech Consultants)

Baseerat Afrose Siddiqui, M.S., Civil and Environmental Engineering, 1999

Sean Brennan, M.S., Geology, 1999

Vicki Christianson, M.S., Civil and Environmental Engineering, 1998

Debby Snodgrass, M.S., Civil and Environmental Engineering, 1998

Jill Fite, M.S., Geology, 1997

Kristen L. Stanford, M.S., Geology, 1997

Tracy Whitesell, M.S., Geology, 1996

Terrance Huettl, M.S., Geology, 1995

Sue Hoff, M.S., Geology, 1992

Xiasong Jiang, M.S., Geology, 1991

Albert J. Robb, III, M.S., Geology, 1991

#### **D. Honors and Awards for Teaching**

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)

## **RESEARCH RECORD**

### **A. Research Publications**

#### **Major Publications**

1. Pfister, Samantha, Capo, R. C., Stewart, B. W., Macpherson, G. L., Phan, Thai T., Gardner, J. L., Diehl, J. R., Lopano, C. & Hakala, J. A. (published online, 19 October 2017). Geochemical and lithium isotope tracking of dissolved solid sources in Permian Basin carbonate reservoir and overlying aquifer waters at an enhanced oil recovery site, northwest Texas, USA. *Applied Geochemistry*,



<http://dx.doi.org/10.1016/j.apgeochem.2017.10.013>.

2. Vero, S. E., Macpherson, G. L., Sullivan, P. L., Brookfield, A. E., Kirk, M. F., Datta, S., Kempton, P., (published online 12 October 2017). Developing a conceptual framework of landscape and hydrology on tallgrass prairie. *Vadose Zone Journal*, Special Issue, doi:10.2136/vzj2017.03.0069.
3. Whitney, J. E., Gido, K. B., Hedden, S. C., Macpherson, G. L., Pilger, T. J., Propst, D. L., and Turner, T. F. (published online, 7 March 2017). Identifying the source population of fish re-colonizing an arid-land stream following wildfire-induced extirpation using otolith microchemistry. *Hydrobiologia*, DOI 10.1007/s10750-017-3143-1.
4. Brookfield, A., Macpherson, G. L., Covington, M. (first published online, 19 Sept. 2016; published March/April 2017). Effects of changing meteoric precipitation patterns on groundwater temperature in karst environments. *Groundwater*, 55(2): pp 227-236; DOI 10.1111/gwat.12456.
5. Gardner, C., Chambers, L. G., Chin, Yu-Ping, Filippelli, G. M., Herndon, E. M., Long, D. T., Lyons, W. B., Macpherson, G. L., McElmurry, S. P., McLean, C. E., Moore, J., Moyer, R. P., Nezat, C. A., Soderberg, K., Teutsch, N., Widom, E., 2016. Developing the scientific framework for urban geochemistry. *Applied Geochemistry*, 67, pp. 1-20; doi.org/10.1016/j.apgeochem.2016.01.005. (Refereed)
6. Phan, T.T., Capo, R.C., Stewart, B.W., Macpherson, G.L., Rowan, E.L. and Hammack, R.W., 2016. Factors controlling Li concentration and isotopic composition in formation waters and host rocks of Marcellus Shale, Appalachian Basin. *Chemical Geology*, 420, pp.162-179; doi.org/10.1016/j.chemgeo.2015.11.003. (Refereed)
7. Macpherson, G.L., Johnson, W.C. and Liu, H., 2015. Viability of karezes (ancient water supply systems in Afghanistan) in a changing world. *Applied Water Science*, 2015, pp.1-22. DOI: 10.1007/s13201-015-0336-5. (Refereed)
8. Thompson, A.R., Stotler, R.L., Macpherson, G.L. and Liu, G., 2015. Laboratory study of low-flow rates on clogging processes for application to small-diameter injection wells. *Water Resources Management*, 29(14), pp. 5171-5184; doi:10.1007/s11269-015-1111-y. (Refereed)
9. Macpherson, G.L., 2015. Lithium in fluids from Paleozoic-aged reservoirs, Appalachian Plateau region, USA. *Applied Geochemistry, Special Issue: Shale Gas Geochemistry*, 60, pp.72-77, DOI: <http://dx.doi.org/10.1016/j.apgeochem.2015.04.013> (Refereed)
10. Macpherson, G. L., Phan, T. T., and Stewart, B. W., (2015). Direct determination (without chromatographic separation) of lithium isotopes in saline fluids using MC-ICP-MS: Establishing Limits on Water Chemistry. *Journal of Analytical Atomic Spectrometry*, 30, 1673-1678; DOI: 10.1039/c5ja00060b. (Refereed)
11. Liu, H., Liu, Z., Macpherson, G. L., Yang, R., Chen, B., & Sun, H. (2015). Diurnal hydrochemical variations in a karst spring and two ponds, Maolan karst experimental site, China: Biological pump effects. *Journal of Hydrology*, 522, 407-417. doi:10.1016/j.jhydrol.2015.01.011 (Refereed)

12. Macpherson, G. L., Capo, R. C., Stewart, B. W., Phan, T. T., Schroeder, K., & Hammack, R. W. (2014). Temperature-dependent Li isotope ratios in Appalachian Plateau and Gulf Coast Sedimentary Basin saline water. *Geofluids*, *14*(4), 419-430. doi:10.1111/gfl.12084 (Refereed)
13. Tsy-pin, M., & Macpherson, G. L. (2012). The effect of precipitation events on inorganic carbon in soil and shallow groundwater, Konza Prairie LTER Site, NE Kansas, USA. *Applied Geochemistry*, *27*(12), 2356-2369. doi:10/1016/j.apgeochem.2012.07.008 (Refereed)
14. Macpherson, G. L., & Lee, Y.-J. (2011). Group-examination improves learning for low-achieving students. *Journal of Geoscience Education*, *59*, 41-45. doi:10.5408/1.3543930 (Refereed)
15. Steward, D. R., Yang, X., Lauwo, S. Y., Staggenborg, A., Macpherson, G. L., & Welch, S. M. (2011). 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*, 4195-4228. (Refereed)
16. Suarez, C., Macpherson, G. L., González, L., & Grandstaff, D. E. (2010). 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*, 2970-2988. doi:10.1016/j.gca.2010.02.023 (Refereed)
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### **Minor Publications**

1. Johnson, W. C., Macpherson, G. L., & Stotler, R. (2014, July 31). Chapter 3, Landscapes and Water Resources: Response to Climate Change and Human Impacts in Semi-Arid and Arid Regions of AFRICOM. *Final Report of Accomplishments, Reporting Period 1 August 2012 – 14 March 2014, ARO Phase Two Project (FED 68156)*, 189 p (pp. 9-103).

2. Johnson, W. C., Macpherson, G. L., & Stotler, R. (2013, July 31). Chapter 5, Landscapes and Water Resources: Response to Climate Change and Human Impacts in Semi-Arid and Arid Regions of AFRICOM. *Interim Report of Progress and Accomplishments, Reporting Period 1 August 2012 – 31 July 2013, ARO Phase Two Project (FED 68156)*, 126 p (pp. 11-49).
3. Macpherson, G. L. (2013, July 31). Chapter 3, Modeling Water Resources: A Case Study in Afghanistan. *Final Report of Progress and Accomplishments, Reporting Period 2010 – 2013, ARO Phase One Project (FED 68526)*, 83 p (pp. 13-21).
4. Johnson, W. C., Macpherson, G. L., & Stotler, R. (2012, July 31). Landscapes and Water Resources: Response to Climate Change and Human Impacts in Semi-Arid and Arid Regions of AFRICOM, 41 p. *Interim Report of Progress and Accomplishments, Reporting Period 1 August 2011 – 31 July 2012, ARO Phase Two Project (FED 68156)*
5. Macpherson, G. L. (2012, July 31). Modeling Water Resources: A Case Study in Afghanistan, 7 p. *Interim Report of Progress and Accomplishments, Reporting Period 1 August 2011 – 31 July 2012, ARO Phase One Project (FED 68526)*
6. Hoopes, J. W., Johnson, W. C., Macpherson, G. L., Mandel, R. D., & Stinson, P. (2011, July 31). Modeling Cultural Landscapes and Water Resources: A Case Study in Afghanistan, 69 p. *FY 2010-2011 Interim Report of Progress and Accomplishments, Reporting Period 2 February 2010 – 31 July 2011, ARO Phase One Project (FED 68526)*
7. Macpherson, G. L. (2008). [Review of the book *The Deep*, by Claire Nouvian]. *Palaios*. doi:10.2110/palo.2008.BR36 (Refereed)
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of Colonel M.H. Hawkins property, Kendall County, Texas. *Texas Water Quality Board Report No. GS-76-26F* (pp. 15).

## Works Submitted or Ready for Submission

### Journal Articles

1. Rawitch, M. J., Macpherson, G. L., Brookfield, A. E. (accepted pending revisions, January 2018). Methods for measuring atmospheric exchange rates from low-ordered streams: A critical review. *Earth-Science Reviews*.
2. Sullivan, P. L., Macpherson, G. L., Martin, J. B., Price, R. M., editors (in progress, due 30 September 2017). Evolution of Carbonate and Karst Critical Zones, Special Issue, *Chemical Geology*.
3. Macpherson, G. L., Sullivan, P. L. (in progress, abstract submitted 31 October 2016; due 31 January 2018). Modeling dust chemical reactions with rain as the source of groundwater solutes. *Special Issue, Carbonate Weathering and Evolution of the Karst Critical Zone, Chemical Geology*. (Refereed).
4. Macpherson, G. L., Sullivan, P. L. (in progress, abstract submitted 31 October 2016; due 31 January 2018). Watershed-scale and in situ weathering rates in a carbonate-dominated headwater-stream watershed. *Special Issue, Carbonate Weathering and Evolution of the Karst Critical Zone, Chemical Geology*. (Refereed).
5. Macpherson, G. L., Lechtenberg, K. S., Huff, B. L. (in revision after rejection from 16 November 2016 submission). Shallow stream-flow measurement with a pitot tube. *Scientific Briefings, Hydrological Processes*. (Refereed)
6. Sullivan, P. L., **Macpherson**, G. L., Dodds, W. K., Johnson, W. C. (in revision, fall 2016). Concentration-discharge behavior of low-order streams at the Konza Prairie (KS, USA). Special Issue, *Chemical Geology*.
7. Liu, H., & Macpherson, G. L. (in progress). Sources of inorganic carbon in a stream, Konza Long-Term Ecological Research Site, USA. *Journal of Hydrology*.
8. Macpherson, G. L., Lechtenberg, K. S., & Huff, B. L. (in progress). Low velocity shallow stream-flow measurement and stream CO<sub>2</sub> emission calculations, Konza Prairie LTER Site, northeastern Kansas, USA. *Hydrological Processes*.
9. Macpherson, G. L., & Johnson, W. C. (in progress). Lanthanides in loess soils over Permian limestone and shale, Konza Prairie LTER Site, northeastern Kansas, USA. *Science of the Total Environment*.
10. Rawitch, M. J., & Macpherson, G. L. (in progress). Testing the validity of gas efflux measurements in a floating chamber in shallow, flowing water. *ES&T*.

## B. Scholarly Presentations/Lectures



**Major Presentations/Lectures**

1. Barry, E., Macpherson, G. L., 2017. Characterization of groundwater flow paths through merokarst in the N04d section of the Konza Prairie Long-Term Ecological Research Site in northeastern Kansas, USA. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-303362.
2. Davis, C., Macpherson, G. L., 2017. Headwater stream discharge characterization in the Konza Prairie's merokarst environment using a pitot tube. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-304661.
3. Spangler, E., Macpherson, G. L., 2017. Testing dust collection and recovery methods for geochemical analysis: implications to groundwater chemistry and landscape evolution. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-304236.
4. Hendricks, S., Macpherson, G. L., Stotler, R. L., 2017. Lithium in sequential extractions of alkaline lake sediment cores, western Nebraska: Implications for chemical weathering. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-308185.
5. Stops, M. W., Sullivan, P. L., Macpherson, G. L., Li, Li, Dodds, W. K., 2017. Unravelling how landscape heterogeneity alters concentration discharge behavior in carbonate headwater streams. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-298495.
6. Sullivan, Pamela L., Li, Li, Macpherson, G.L., Stops, M. W., and Dodds, W., 2017. Do deeper roots enhance weathering at depth in woody-encroached grasslands? Goldschmit 2017, 13-18 August 2017, Paris, France.
7. Whitney, James, Gido, K. B., Hedden, S. C., Macpherson, G. L., Pilger, T. J., Propst, D. L., Turner, T. F., 2017. Identifying the source population of fish re-colonizing an arid-land stream following wildfire-induced extirpation using otolith microchemistry. Southwestern Association of Naturalists (SWAN), Lawton, OK, April 13-16, 2017.
8. Macpherson, G. L., 2017. Geochemical modeling of dust as the source of solutes in merokarst groundwater, Konza LTER Site, northeastern Kansas. 51<sup>st</sup> Annual Meeting, South-Central Geological Society of America, San Antonio, TX, 13-14 March 2017, GSA Abstracts with Programs, vol. xx, no. xx, Abstract No: 289456.
9. Vero, S., Macpherson, G. L., Sullivan, P. L., Brookfield, A. E., Kirk, M. F., Datta, S., Kempton, P., 2016. The Konza Prairie, northeast Kansas, USA: the hydrologic evolution of a merokarst landscape. Abstract EP43C-0980 presented at 2016 Fall Meeting, American Geophysical Union, San Francisco, CA, 12-16 December 2016.
10. Whittemore, D. O., Aguilar, J., Macpherson, G. L., Ueshima, M., Fowle, D. A., 2016. Fate of High Uranium in Saline Arkansas River Water in Irrigated Areas of Southwest Kansas. 25<sup>th</sup> Annual Kansas Hydrology Seminar, Kansas City/Omaha Section of AEG (Association of Environmental and Engineering Geologists), Topeka Kansas, 18 November 2016.

11. Macpherson, G. L., Sullivan, P. L., Johnson, W. C., 2016. Chemical weathering model of stream water chemistry in a merokarst region does not require limestone dissolution, Konza Prairie LTER Site, northeastern Kansas. Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 285090.
12. Norwood, B. S., Macpherson, G. L., 2016. Quantifying CO<sub>2</sub> flux and δ<sup>13</sup>C fractionation using a suspended chamber in the South Fork of Kings Creek, Konza Prairie LTER Site, northeastern Kansas. Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 285840.
13. Brookfield, A. E., Macpherson, G. L., Covington, M. D., 2016. Effect of increasing cool-season precipitation on groundwater temperature in merokarst environments. Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 284234.
14. Whittemore, D. O., Aguilar, J., Macpherson, G. L., Ueshima, M., Fowle, D. A., 2016. Fate of uranium from Arkansas River water irrigated agriculture. Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 283200.
15. Stops, M. W., Sullivan, P. L., Macpherson, G. L., Dodds, W. K., 2016. Elucidating the impact of land cover and climate change on concentration-discharge relationships in epikarst watersheds. Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 285534.
16. Vero, S. E., Datta, S., Kirk, M. F., Macpherson, G. L., Sullivan, P. L., Kluitenberg, G. J., Ransom, M. D., Kempton, P., 2016 How does burning affect soil structure and vadose hydrology of tallgrass prairie? Geological Society of America Annual Meeting, Denver, CO, 25-28 September 2016, GSA Abstracts with Programs, v. 48, no. 7, abstract no. 282340.
17. Johnson, W. C., Macpherson, G. L., 2016, Mapping and modeling karezes (ancient water supply systems) of Afghanistan. Association of American Geographers, 62<sup>nd</sup> Annual Meeting, San Francisco, California (March 29, 2016 – April 2, 2016).
18. Macpherson, G. L., 2016, Shallow groundwater and the short-term global carbon cycle. Oklahoma State University (March 25, 2016; invited).
19. Norwood, B., Macpherson, G. L., Stotler, R., Rawitch, M., 2016, Quantifying CO<sub>2</sub> degassing and δ<sup>13</sup>C using a floating chamber in a gaining headwater stream. NWGA Groundwater Summit 2016, Denver, Colorado (April 24, 2016 – April 27, 2016).
20. Johnson, W. C., Macpherson, G. L., 2016, Mapping and modeling karezes (ancient water supply systems) of Afghanistan. Association of American Geographers Annual Meeting, San Francisco, California (March 29, 2016 – April 2, 2016). (International)
21. Macpherson, G. L., 2016, Shallow groundwater and the short-term global carbon cycle. University of Puerto Rico-Mayaguez (February 28, 2016; invited).
22. Sullivan, P. L., Kempton, P., Macpherson, G. L., Kirk, M., Brunsell, N., Nippert, J.,

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23. Whittemore, D. O., Ueshima, M., Aguilar, J., Macpherson, G. L., Fowle, D. A., 2015, Fate of high uranium in saline Arkansas River water in southwest Kansas: Distribution in soils, crops, and groundwater. Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas (November 18, 2015 – November 19, 2015). (Regional)
  24. Norwood, Brock S., Macpherson, G.L., & Rawitch, M.J., 2015, Quantifying CO<sub>2</sub> degassing and  $\delta^{13}\text{C}$  using a floating chamber in a gaining headwater stream. Geological Society of America Annual Meeting, Baltimore, Maryland. GSA Abstracts with Programs: 47 (6), abst. no. 269958 (November 1, 2015 – November 4, 2015). (International)
  25. Macpherson, G. L., & Brookfield, A. "Mid-Continent sandwich aquifer karst: A laboratory to study effects of future climate change," Midwest Ground Water Conference, Oct. 14 – 15, 2015, Bentonville, Arkansas. Proceedings, Midwest Ground Water Conference, 2015 (October 14-15, 2015). (National/Regional)
  26. Macpherson, G. L., Brookfield, Andrea, & Long, Jamie, "Negative feedback to climate warming: how shifts in recharge timing can affect shallow groundwater temperature, Konza Prairie LTER Site, northeastern Kansas," Geological Society of America Annual Meeting, Vancouver, British Columbia, Canada. GSA Abstracts with Programs: 46 (6): abst. no. 246259 (October 19, 2014 - October 22, 2014). (International)
  27. Rawitch, M. J., & Macpherson, G. L., "CO<sub>2</sub> flux from grassland headwater streams," Geological Society of America Annual Meeting, Vancouver, British Columbia, Canada. GSA Abstracts with Programs: 46 (6) abst. no. 243414. (October 19, 2014 - October 22, 2014). (International)
  28. Macpherson, G. L., "Consequences of rapid snowmelt events on soil nutrient loss in a mesic tallgrass prairie, the Konza Prairie LTER Site, Northeastern Kansas," Midwest Ground Water Conference, Sept. 30 – Oct. 2, 2014, Lawrence, Kansas. Proceedings, Midwest Ground Water Conference, 2014. (October 1, 2014). (National/Regional)
  29. Rawitch, M., & Macpherson, G.L., "Quantifying CO<sub>2</sub> efflux in grassland headwater streams," Midwest Ground Water Conference, Sept. 30 – Oct. 2, 2014, Lawrence, Kansas. Proceedings, Midwest Ground Water Conference, 2014. (October 1, 2014). (National/Regional)
  30. Macpherson, G. L., & Rawitch, M. J., "Establishing an international database of plant-available metals in urban garden soils (PAM-UGS)," IAGC Urban Geochemistry Working Group Meeting, Columbus, Ohio. (August 5, 2014 - August 7, 2014). (National)
  31. Macpherson, G. L., "Groundwater and the global carbon cycle." Karst Research Institute, Guilin, Guangxi, PR China. (June 24, 2014). (International, Invited)
  32. Macpherson, G. L., "Groundwater and the global carbon cycle," State Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, Guizhou, PR China. (June 20, 2014). (International, Invited)

33. Goldade, M. M., Lee, E., Kastens, J. H., Dobbs, K. E., Johnson, W. C., & Macpherson, G. L., "Modeling past and present flood water inundation in the Middle East," MAGIC (Mid-America GIS) Conference, Kansas City, Missouri. (April 27, 2014 - May 1, 2014). (Regional)
34. Liu, Huan, & Macpherson, G. L., "Carbon Dioxide Efflux from a Groundwater-Fed Stream, Konza Prairie LTER Site, Northeastern Kansas, USA," Geological Society of America Annual Meeting, Denver, CO. Abstracts with Programs: 45(7) (October 2013). (International)
35. Macpherson, G. L., "Lithium in Fluids from Paleozoic-aged Reservoirs, Appalachian Plateau Region, USA," Geological Society of America Annual Meeting, Denver, CO. Abstracts with Programs: 45(7) (October 2013). (International)
36. Johnson, W. C., Kastens, J. H., Lee, E., Dobbs, K. E., & Macpherson, G. L., "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). (International)
37. Macpherson, G. L., Stotler, R. L., & Johnson, W. C., "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). (International)
38. Macpherson, G. L., Capo, R. C., Stewart, B. W., Phan, T. T., Schroeder, K. T., & Hammack, Richard W., " $\delta^7\text{Li}$  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). (International)
39. Macpherson, G. L., "Burial diagenesis in sedimentary basins, processes and elements mobilized," University of Pittsburgh, PA. (March 6, 2013). (Regional, Invited)
40. 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). (Regional, Invited)
41. Johnson, William C., Kastens, Jude, Lee, Eunmok, Dobbs, Kevin E., & Macpherson, G. L., "Modeling extreme flood events in Afghanistan," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 44(7) (November 2012). (International)
42. Macpherson, G. L., Capo, R. C., Stewart, B. W., Phan, Thai T., Schroeder, Karl T., & Hammack, Richard W., "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). (International)
43. Macpherson, G. L., Liu, Huan, Whisner, C., & Johnson, W. C., "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). (International)

44. Phan, Thai T., Capo, Rosemary C., Stewart, Brian W., Gardiner, James B., Macpherson, G. L., Hakala, J. Alexandra, & Keating, Elizabeth H., "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). (International)
45. Stewart, Brian W., Capo, Rosemary C., Chapman, Elizabeth C., Hammack, Richard W., Schroeder, Karl T., Wall, Andrew J., Macpherson, G. L., Phan, Thai T., & Gardiner, James B., "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). (International)
46. Macpherson, G. L., Johnson, W. C., & Liu, Huan, "Water insecurity in rural Afghanistan," KU Environmental Security Conference, Lawrence, KS. (April 2012). (International, Invited)
47. Johnson, W. C., Price, Z., Mein, A. R., Dobbs, K. E., & Macpherson, G. L., "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). (International)
48. Macpherson, G. L., Johnson, W. C., Whisner, Carla, Dobbs, Kevin, & Egbert, Stephen, "Karez systems of southern Afghanistan—Adaptation to environmental change," XVIII. International Union for Quaternary Science (INQUA) Congress, Bern, Switzerland. (2011). (International)
49. Tsy-pin, M. A., & Macpherson, G. L., "A role of infiltration in redistribution of CO<sub>2</sub> between soil and groundwater: a case study from Konza Prairie, USA," Integrated Problems of Hydrogeology, St. Petersburg, Russia. Integrated problems of hydrogeology, proceedings of the scientific conference: 194-196 (in Russian) (2011). (International)
50. Johnson, W. C., Macpherson, G. L., Dobbs, K. E., & Mein, Alicia, "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). (International)
51. Macpherson, G. L., Tsy-pin, M., Roberts, J. A., & Ching, G. B., "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). (International)
52. Tsy-pin, M., & Macpherson, G. L., "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). (International)
53. Johnson, W. C., Dobbs, K. E., Macpherson, G. L., & Egbert, S. L., "Karez systems and landscape modeling in southern Afghanistan," 9th International Conference of Military Geoscience. (June 2011). (International)
54. Macpherson, G. L., Whisner, Carla, & Johnson, W. C., "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). (International)
55. Guo, J., Peltier, E., & Macpherson, G. L., "Measuring trace metal concentrations in diesel and biodiesel particulate emissions," Symposium on Air Quality Measurement Methods and Technology, The Air & Waste Management Association (A&WMA). (November 2, 2010 - November 4, 2010). (International)
56. Macpherson, G. L., "Chemical weathering rate increasing at the Konza Prairie LTER Site, NE Kansas, USA," Geological Society of America Annual Meeting. GSA Abstracts with Programs: Vol. 42, No. 5 (October 2010). (International)
57. Tsy-pin, M., & Macpherson, G. L., "CO<sub>2</sub> of soil and groundwater in relation to storm recharge, Konza Prairie LTER Site, NE Kansas," Geological Society of America Annual Meeting. GSA Abstracts with Programs: Vol. 42, No. 5 (October 2010). (International)
58. Whisner, Carla, & Macpherson, G. L., "Groundwater flow through a horizontal drain in an alluvial fan aquifer, Kandahar, Afghanistan," Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Annual Conference. (October 2010). (International)
59. Huff, B. L., & Macpherson, G. L., "Reforestation or response to rising atmospheric CO<sub>2</sub>: investigating two possible mechanics for the increase in groundwater CO<sub>2</sub> at the Konza Prairie, northeastern Kansas," Geological Society of America Annual Meeting. GSA Abstracts with Programs: Vol. 41, No. 7, p. 664 (2009). (International)
60. Johnson, W. C., Mason, J. A., Woodburn, T. L., & Macpherson, G., "View of the MIS 2 - MIS 1 transition from paleosol archives within loess of the North American central Great Plains," Biannual National Meeting of American Geophysical Union (AGU). EOS Transactions AGU 90(52), Fall Meeting Supplement: Abstract AGU PP23E-08 (2009). (International)
61. Macpherson, G. L., "CO<sub>2</sub> in groundwater: the past 50+ years, and more to learn," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 41(7): 173 (2009). (International)
62. Ohmes, Karen G., Macpherson, G. L., & Huff, B. L., "Low stream-flow measurement and stream CO<sub>2</sub> emission calculations, Konza Prairie LTER site, northeastern Kansas, USA," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 41(7): 664 (2009). (International)
63. Macpherson, G. L., "Groundwater and the global carbon cycle," Seminar, University of Nebraska-Lincoln, Stroh's Lecture, Lincoln, NE. (September 25, 2009). (Regional, Invited)
64. Suarez, C. A., Macpherson, G. L., & Grandstaff, D. E., "Rare earth element geochemistry of fossil bone: using geochemical patterns to trace illegally excavated fossils," Eighth Conference on Fossil Resources, St. George, UT. Proceedings of the Eighth Conference on Fossil Resources: Foss, S., Cavin, J., Brown, T., Kirkland, J., & Stantucci, V. Eds., pp. 4-6 (May 19, 2009 - May 21, 2009). (International)
65. Macpherson, G. L., "Cropped land vs. undisturbed tallgrass prairie - the impact on

- shallow groundwater chemistry," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 40(6): 134 (2008). (International)
66. Macpherson, G. L., "CO<sub>2</sub> release from groundwater and human population growth," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 39(6): 42 (2007). (International)
  67. Suarez, C. A., Macpherson, G. L., Grandstaff, D. E., & González, L., "Geochemical and petrographic analysis of fossil bone: unexpected results and implication for fossilization," 2007 Society for Advancement of Chicanos and Native Americans in Science (SACNAS) National Conference. (2007). (International) *Best Oral Presentation, Ph.D. Student Division*
  68. Wolfe, M. R., Stockli, D. F., Shuster, D. L., Walker, J. D., & Macpherson, G. L., "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). (International)
  69. Macpherson, G. L., Roberts, J. A., & Fowle, D. A., "Increasing Groundwater CO<sub>2</sub> and Other Solutes Under Tallgrass Prairie, Northeastern Kansas, USA," Biannual National Meeting of American Geophysical Union. Eos Transactions AGU 87(52), Fall Meeting Supplement: Abstract V53D-1786 (December 2006). (International)
  70. Kissing, Kimberly Rae, & Macpherson, G. L., "Short-term water-level fluctuations and long-term water-level decline at the Konza Prairie - drought or vegetation?" Geological Society of America Annual Meeting. GSA Abstracts with Programs: 38(1): 35 (2006). (International)
  71. Macpherson, G. L., "Trends in water chemistry of shallow limestone aquifers: Konza Prairie LTER site, northeastern Kansas USA," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 38(7): 466 (2006). (International)
  72. Suarez, Celina A., Macpherson, G. L., Gonzalez, L. A., & Kirkland, J. I., "Preliminary geochemical taphonomy of bone bed sites in the Yellow Cat Member of the Cedar Mountain Formation, Utah," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 38(7): 395 (October 2006). (International)
  73. Stafford, Sherry L., Capo, Rosemary C., Stewart, Brian W., & Macpherson, G. L., "Geochemical and Textural Investigation of an Archean Paleosol, South Roberts Pit, Steep Rock Area, Ontario, Canada," Biannual Meeting of AGU. EOS Transactions AGU 86(52) Fall Meeting, Supplement: Abstract V43B-1583 (December 2005). (International)
  74. Macpherson, G. L., Johnson, W. C., & Gatto, L. W., "REE in Konza Prairie LTER Site (USA) soil—Allochthonous?" Goldschmidt Conference, Moscow, ID. Geochimica et Cosmochimica Acta: 69(105): A604 (2005). (International)
  75. Stafford, Sherry L., Stewart, Brian W., Capo, Rosemary C., & Macpherson, G. L., "Geochemical and textural investigation of an Archean Paleosol, South Roberts Pit, Steep Rock Area, Ontario, Canada," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 37(7): 115 (October 2005). (International)

76. Blackburn, Terrence J., Stockli, Daniel, Berendsen, Pieter, Carlson, Richard W., & Macpherson, G. L., "New (U-Th)/He Age constraints on the emplacement of kimberlite pipes in north-eastern Kansas," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 36(5): 447 (2004). (International)
77. Wilson, Amanda, Roberts, J. A., & Macpherson, G. L., "Weathering dynamics from selected soil sites on Barro Colorado Island, Panama," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 36(5): 494 (2004). (International)
78. Rogers, J. R., Macpherson, G. L., & Gonzales, Luis, "Microbial precipitation of dolomite in methanogenic groundwater," American Association of Petroleum Geologists (AAPG) Annual Meeting. AAPG Bulletin: 88(13): Supplement (April 2004). (International)
79. Johnson, William C., Macpherson, G. L., Ketterer, Michael E., Kaste, James M., & Gatto, Lawrence W., "Topographic variation in biogeochemical signatures within soils of the Konza Tallgrass Prairie LTER Site, Kansas," American Association of Geographers (AAG) 100th annual meeting, Philadelphia, PA. (March 14, 2004 - March 19, 2004). (International)
80. Macpherson, G. L., Johnson, William C., Landsberger, Sheldon, Ketterer, Michael E., Gatto, Lawrence, & Blair, G. N., "Nonradioactive cesium and rubidium as analogs for  $^{137}\text{Cs}$  behavior in soil at the Konza Prairie LTER site, northeastern Kansas," Geological Society of America Annual Meeting. Geological Society of America, Abstracts with Programs: 35(6): 68-11 (October 2003). (International)
81. Rogers, J. R., Bennett, P. C., & Macpherson, G. L., "Microbial precipitation of dolomite in groundwater," Goldschmidt Conference. *Geochimica et Cosmochimica Acta*: 67(18): A400-A400 Supplement (September 1, 2003). (International)
82. Walton, A. W., Schiffman, P., & Macpherson, G. L., "Mass balance attending gel palagonitization of hyaloclastites in the HSDP 2 Phase 1 core," Biannual Meeting of the American Geophysical Union. *Eos Trans. AGU*, 83(47), Fall Meeting Supplement: Abstract V22B-1237 (December 2002). (International)
83. 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). (Regional, Invited)
84. Hunter, Lewis E., Gebhart, D. L., Macpherson, G. L., Johnson, W. C., Landsberger, S., Hohmann, M. G., & Gatto, L., "Detailed investigation of soil geochemistry to evaluate radioisotope distribution in prairie soils," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 33(6): A-366 (2001). (International)
85. Walton, A. W., Macpherson, G. L., Schiffman, P., & Santee, S., "Mass fluxes attending the palagonitization of sideromelane in hyaloclastites from the HSDP-2 Core Hole," Biannual Meeting of American Geophysical Union (AGU). *Eos Transactions AGU Fall Meeting Supplement*: 82(47) Abstract V12B-0973 (2001). (International)
86. Macpherson, G. L., & Wood, H., "Chemical weathering of carbonate phases at Konza Prairie LTER Site—Dependence on imported material," Geological Society of America



- Annual Meeting. Geological Society of America Abstracts with Programs: 33(6): A-343 (October 2001). (International)
87. Macpherson, G. L., Stafford, Sherry L., Capo, Rosemary C., Stewart, Brian W., & Ohmoto, Hiroshi, "Geochemistry of an Archean Paleosol, Steep Rock, Ontario, Canada: whole rock and LAM-ICPMS analysis," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 32(7): A-485 (2000). (International)
  88. Wood, Heather K., & Macpherson, G. L., " 'Punctuated equilibrium': The effect of rainwater recharge on mineral weathering in thin limestone aquifers, north-central Kansas," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 32(7): A-483 (October 2000). (International)
  89. Macpherson, G. L., "Chemical weathering," LTER All Scientists' Meeting. (August 2, 2000 - August 4, 2000). (International, Invited)
  90. Macpherson, G. L., "Piezometers in watershed studies," LTER All Scientists' Meeting. (August 2, 2000 - August 4, 2000). (International, Invited)
  91. Stafford, Sherry L., Capo, Rosemary C., Stewart, Brian W., Macpherson, G. L., & Ohmoto, Hiroshi, "Micromorphology and geochemistry of an apparent Archean weathering profile, Ontario, Canada," Biannual Meeting of American Geophysical Union (AGU). Eos Transactions 80, Fall Meeting Supplement: Abstract V41C-06 (December 1999). (International)
  92. Hall, J. M., Macpherson, G. L., & Black, R. A., "Nitrate in a Confined, Alluvial Aquifer: 3-D Movement Through Time," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 31(6): A-396 (October 1999). (International)
  93. Macpherson, G. L., "Hydrogeology, Geology and Geomorphology of Konza Prairie," National Science Foundation (NSF) - LTER (Long-term Ecological Research) Site Review. (September 1999). (International, Invited)
  94. Macpherson, G. L., Plank, T., & Gravatt, D., "Element fractionation during UV-laser ablation of silicates," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) XXV. FACSS Final Program Book of Abstracts: p. 103 (September 1998). (International)
  95. Macpherson, G. L., & Jackson, Simon, "Trace elements in recent algal carbonate at the Konza LTER site, northeastern Kansas, determination by laser ablation microprobe (LAM) ICPMS," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 29(6): A-175 (1997). (International)
  96. Angino, Ernest E., & Macpherson, G. L., "Leachable trace elements in non-dairy coffee creamers," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 29(6): A-173 (October 1997). (International)
  97. Macpherson, G. L., McElwee, C. D., Butler, J. J., Jr., & Bohling, G. S., "Water chemistry variation in an alluvial aquifer - Multi-level samplers reveal more than screened wells,"

- Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 28(7): A-460 (1996). (International)
98. Schulmeister, M. K., & Macpherson, G. L., "Microscale variability in vertical, horizontal, and temporal chemical gradients in an alluvial aquifer in Kansas," Geological Society of America, North-Central Meeting. Abstracts with Programs: 28(6): 17 (March 1996). (International)
99. Macpherson, G. L., "Minor halogens in Eocene Wilcox Group Formation Waters, Texas Gulf Coast Sedimentary Basin," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 27(6): A95-96 (October 1995). (International)
100. Bohling, G. C., McElwee, C. D., Butler, J. J., Jr., Orcutt, M., and Macpherson, G. L., "GEMSTRAC1 - An induced gradient tracer test in an alluvial sand and gravel aquifer," XXI General Assembly of the International Union of Geodesy and Geophysics, Boulder, CO. Annual Meeting Abstracts, Week A: p. A231 (July 2, 1995 - July 14, 1995). (International)
101. Macpherson, G. L., "Bromide in formation water - An organic source?" Petroleum Research Fund, American Chemical Society. 38th Annual Report on Research: p. 414 (1994). (International)
102. Macpherson, G. L., "Nitrate at the Konza Prairie NSF-EPSCoR site, Kansas, USA," Biannual National Meeting of American Geophysical Union (AGU), Fall Meeting. EOS Transcripts: 75(44): 262 (1994). (International)
103. Schulmeister, M. K., and Macpherson, G. L., "Spatial and temporal variations in del-15-N - Preliminary evaluation of an alluvial aquifer in Kansas, USA," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 26(7): 323 (1994). (International)
104. Macpherson, G. L., "Bromide content of Pennsylvanian black shales, implications for sources of halogens in formation waters," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 26(7): 164 (October 1994). (International)
105. Macpherson, G. L., "Mg and Ca during burial of sea water in sediments - Relation to salt dissolution and other water-rock interaction," Geological Society of America Annual Meeting. GSA Abstracts with Programs: 25(6): 253 (October 1993). (International)
106. Macpherson, G. L., "Hydrogeochemistry of a Prairie/Wooded Riparian Zone Watershed, Konza LTER Site, Kansas, USA," American Geophysical Union Biannual Meeting, Fall Meeting. EOS Transcripts: 73(43): 191-192 (December 1992). (International)
107. Macpherson, G. L., "Variations in shallow ground-water chemistry, Konza Prairie LTER Site, Kansas, USA, 1991," American Geophysical Union Biannual Meeting, Spring Meeting. EOS Transcripts: 73(14): 126-127 (May 1992). (International)
108. Land, L. S., Mack, L. E., Macpherson, G. L., and Milliken, K. L., "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). (International, Invited)
109. Macpherson, G. L., "Chemical trends along ground-water flow paths, Cretaceous Dakota Formation aquifer, Kansas," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Program: 22(7): 295 (October 1990). (International)
110. Macpherson, G. L., "Bromide in Gulf Basin formation waters: Organics as an alternate source," Geological Society of America Annual Meeting. Abstracts with Programs: 21(6): 316 (October 1989). (International)
111. Macpherson, G. L., Farr, M. R., and Posey, H. H., "Rare earth element concentration in formation waters, Gulf Coast sedimentary basin," Society of Economic Paleontologists and Mineralogists Annual Midyear Meeting. SEPM Abstracts: 5: 42 (1988). (International)
112. Farr, M. R., Gose, W. A., and Macpherson, G. L., "Paleomagnetic dating of depositional and diagenetic events in Upper Cambrian rocks of central Texas," American Association of Petroleum Geologists Annual Meeting. Bulletin AAPG: 72: 601 (April 1988). (International)
113. Farr, M. R., Gose, W. A., and Macpherson, G. L., "Multiple chemical remnant magnetizations (CRM) in Upper Cambrian rocks and their diagenetic significance," International Union of Geodesy and Geophysics. XIX General Assembly Abstracts: 2: 483 (1987). (International)
114. 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). (International, Invited)
115. Farr, M. R., Gose, W. A., and Macpherson, G. L., "Paleomagnetic age dates from Mississippi Valley-type deposits in central Texas and northern Arkansas," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Programs: 18(6): 598 (1986). (International)
116. Macpherson, G. L., and Land, L. S., "Boron in formation waters of Tertiary- and Quaternary-age sediments, Gulf of Mexico Basin," Geological Society of America Annual Meeting. Geological Society of America Abstracts with Program: 18(6): 679 (October 1986). (International)
117. Macpherson, G. L., and Woodruff, C. M., Jr., "Regional hydrologic trends and their relation to sediment textures of Cretaceous aquifers, North-Central Texas," Geological Society of America, South Central Section Annual Meeting. Abstracts with Programs: 13(5): 241 (April 1981). (Regional)

#### **Minor Presentations/Lectures**

1. Norwood, Brock S., & Macpherson, G.L., 2015, "Quantifying CO<sub>2</sub> degassing using a

- floating chamber in a gaining headwater stream,” Kansas Department of Health and Environment Environmental Conference, Topeka, Kansas (August, 18-20, 2015) (Regional).
2. Rawitch, M., & Macpherson, G.L., “Quantifying CO<sub>2</sub> efflux in grassland headwater streams,” 25<sup>th</sup> Annual Konza Prairie LTER Workshop, Manhattan, Kansas (May 29, 2015) (Regional)
  3. Norwood, Brock S., & Macpherson, G.L., 2015, “Terrestrial LiDAR characterization of stream-bed roughness in support of understanding CO<sub>2</sub> efflux from an intermittent, headwater stream,” 25<sup>th</sup> Annual Konza Prairie LTER Workshop, Manhattan, Kansas (May 29, 2015) (Regional)
  4. Rawitch, M., & Macpherson, G.L., 2014, “Quantifying CO<sub>2</sub> efflux in grassland headwater streams,” University of Kansas, Dept. of Geology, G-Hawk Student Symposium, Lawrence, Kansas (November 21, 2014) (Regional)
  5. Long, Jamie, & Macpherson, G. L., "Changes in seasonal precipitation patterns lower groundwater temperature, 2005-2012, at the Konza Prairie LTER Site, northeastern Kansas," KU Undergraduate Research Symposium, Lawrence, Kansas. Abstracts, KU Undergraduate Research Symposium, Summer 2014 (July 23, 2014). (Regional)
  6. Hedden, S. C., Whitney, J. E., Gido, K.B., Macpherson, G.L., & Rawitch, M., “Otolith microchemical laser ablation of fish in the Upper Gila River Basin,” Kansas Natural Resources Conference, Wichita, Kansas (Jan. 30-31, 2014). (State)
  7. Meyer, David F., Stotler, Randy, Macpherson, G. L., Johnson, W. C., & Whittemore, Donald O., "Risk assessment of aquifer mixing and salinity intrusion in the North West Saharan Aquifer System and how it can be applied to Kansas Aquifer Systems," Governors Water Conference, Student Poster Presentations, Manhattan, Kansas. (October 25, 2013). (State)
  8. Macpherson, G. L., "Fracking in Kansas," Cottey College, EL Chapter of PEO, Kansas City, MO. (March 26, 2013). (Local, Invited)
  9. Ohmes, K., Huff, B., & Macpherson, G. L., "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). (Regional)
  10. Macpherson, G. L., "Groundwater CO<sub>2</sub>, NPP, and the global carbon cycle," 20th Annual Konza Prairie LTER Workshop. (April 10, 2010). (Regional)
  11. Macpherson, G. L., "Groundwater and the global carbon cycle," Kansas Geological Survey Geohydrology Seminar. (December 12, 2009). (Regional, Invited)
  12. Huff, B. L., & Macpherson, G. L., "Reforestation or response to rising atmospheric CO<sub>2</sub>: investigating two possible mechanisms for the increase in groundwater CO<sub>2</sub> at the Konza Prairie, northeastern Kansas," University of Kansas Department of Geology GHawk Symposium, Lawrence, KS: p. 9 (October 31, 2009). (Regional)
  13. Macpherson, G. L., "Groundwater and the global carbon cycle," Seminar, Kansas State University, Geology Department, Manhattan, KS. (September 10, 2009). (Regional,

Invited)

14. Ohmes, Karen, & Macpherson, G. L., "CO<sub>2</sub> emissions from stream at N04d watershed, Konza Prairie LTER site," Osage Chapter of AWG Brown Bag Seminar. (April 22, 2009). (Regional)
15. Macpherson, G. L., & Ohmes, K., "CO<sub>2</sub> output from N04d stream, Konza Prairie LTER Site," 19th Annual Konza LTER Workshop. (March 28, 2009). (Regional)
16. Ohmes, K., Huff, B., & Macpherson, G. L., "Carbon emissions of limestone aquifers of N04d watershed, Konza Prairie biological system, Kansas," 2008 G-Hawk Student Symposium, University of Kansas, Lawrence. KS: p. 7 (October 18, 2008). (Regional)  
3rd Place, Best Presentation
17. 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). (Regional, Invited)
18. Pomes, Michael L., Thurman, E. M., Coplen, T. B., Hopple, J. A., & Macpherson, G. L., "Changes in the delta 13-C of humic substances from soils, soil water, ground, and surface water from a tall-grass prairie watershed, Konza Prairie Research Natural Area, near Manhattan, KS," Geological Society of America North-Central-South-Central Joint Regional Meeting. GSA Abstracts with Programs: 39(3): 6 (2007). (Regional)
19. Suarez, C. A., Macpherson, G. L., Grandstaff, D. E., & Gonzalez, L. A., "Rare earth elements (REE) in dinosaur bone sites record local fractionation of REE in paleo-pore water: A glimpse of the various local depositional environments in the Late Early Cretaceous Cedar Mountain Formation, Utah," Geological Society of America North-Central-South-Central Joint Regional Meeting. GSA Abstracts with Programs: 39(3): 75 (2007). (Regional)
20. Suarez, C. A., Macpherson, G. L., Grandstaff, D. E., & González, L., "Taphonomic puzzles: using rare earth element geochemistry to unravel complex taphonomy of vertebrate fossil sites in the Yellow Cat member of the Cedar Mountain Formation," Geological Society of America North-Central-South-Central Joint Regional Meeting. GSA Abstracts with Programs: 39(5): 33 (2007). (Regional)
21. Suarez, C. A., Macpherson, G. L., Martin, L. D., & Gonzalez, L. A., "Laser ablation ICP-MS analysis of fossil bone: Preliminary results on rare earth element distribution in different types of fossil bone apatite," Geological Society of America North-Central-South-Central Joint Regional Meeting. GSA Abstracts with Programs: 39(3): 18 (2007). (Regional)  
Outstanding Graduate Student Oral Presentation
22. Macpherson, G. L., Roberts, J. A., Fowle, D. A., Townsend, M. A., & Beisner, K. R., "Atmospheric CO<sub>2</sub> and groundwater CO<sub>2</sub> - Is there a connection?" 18th Konza Prairie LTER Site Annual Workshop. (September 1, 2007). (Regional)
23. Macpherson, G. L., "Hydrogeology - assessment of LTER V and what to do for LTER VI," 18th Konza Prairie LTER Site Annual Workshop. (September 1, 2007). (Regional)
24. Suarez, Celina A., Macpherson, G. L., Gonzalez, L. A., Kirkland, J., & Grandstaff, D. E.,

- "Preliminary geochemical taphonomy of bone bed sites in the Yellow Cat Member of the Cedar Mountain Formation, Utah," 2006 G-Hawk Student Symposium, University of Kansas, Lawrence, KS: p. 11 (October 28, 2006). (Regional)
25. Kissing, Kimberly Rae, & Macpherson, G. L., "Boron isotope ratios - Linking groundwater chemistry to landscape evolution of natural prairie environments," Association for Women Geoscientists (AWG) Brown Bag presentation. (April 21, 2006). (Regional)
  26. Kissing, Kimberly, & Macpherson, G. L., "Short-term water level fluctuations and long-term water level decline at the Konza Prairie: drought or vegetation?" 17th Annual Konza Prairie LTER Workshop. (April 1, 2006). (Regional)
  27. Kissing, Kim, & Macpherson, G. L., "Short-Term Water-Level Fluctuations and Long-Term Water-Level Decline at the Konza Prairie: Drought or Vegetation?" Osage Chapter of AWG Brown Bag Seminar. (November 2005). (Regional)
  28. Kissing, Kim, & Macpherson, G. L., "Short-Term Water-Level Fluctuations and Long-Term Water-Level Decline at the Konza Prairie: Drought or Vegetation?" 2005 G-Hawk Student Symposium, University of Kansas, Lawrence, KS: p. 8 (October 8, 2005). (Regional)
  29. 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). (International, Invited)
  30. Stafford, Sherry L., Capo, Rosemary C., Stewart, Brian W., Macpherson, G. L., & Ohmoto, Hiroshi, "Preservation of REE signatures in an Archean weathering profile, lessons from Steep Rock, Ontario, Canada," PSARC Annual Meeting. (May 2005). (International)
  31. Macpherson, G. L., "Groundwater chemistry and the potential importance of dry deposition in Flint Hills grasslands," 16th Annual Konza Prairie LTER Workshop. (March 12, 2005). (Regional)
  32. 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). (Regional, Invited)
  33. Macpherson, G. L., & Johnson, W. C., "Konza as a baseline for soil erosion and evaluation of the  $^{137}\text{Cs}$  method - an update of a work in progress," 15th Annual Konza LTER Workshop. Abstracts: pg. 5-6 (March 6, 2004). (Regional)
  34. Macpherson, G. L., "Temporal trends in groundwater depth on watershed N4D," 14th Annual Konza Prairie LTER Workshop. (November 2, 2002). (Regional)
  35. 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). (Regional, Invited)
  36. Dodds, W. K., Macpherson, G. L., & Gido, K., "Summary of aquatic studies on Konza

Prairie in preparation for National Science Foundation LTER renewal proposal," Aquatic Studies Group leader at the 13th Annual Konza Prairie LTER Workshop. (September 29, 2001). (Regional)

Macpherson contributed data and interpretations to this presentation

37. Macpherson, G. L., "<sup>137</sup>Cs as a soil erosion indicator, Konza Prairie LTER Site," 13th Annual Konza Prairie LTER Workshop. (September 29, 2001). (Regional)
38. 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). (Local, Invited)
39. Macpherson, G. L., "Research Summary and Attracting Attention to KU - 3-d Imagery of Potentiometric Surface, Konza N04d Watershed Morrill Limestone Aquifer," University of Kansas Water Summit, Lawrence, KS. (December 6, 2000). (Regional)
40. Macpherson, G. L., "An Electronic Poster: 3-d Imagery of Potentiometric Surface, Konza N04d Watershed Morrill Limestone Aquifer," 12th Annual Konza LTER Workshop. (December 2, 2000). (Regional)
41. Wood, Heather, & Macpherson, G. L., "Strontium isotopes as environmental indicators of mineral weathering," 12th Annual Konza Prairie LTER Workshop. (December 2, 2000). (Regional)
42. Stafford, Sherry L., Capo, Rosemary C., Stewart, Brian W., Macpherson, G. L., & Ohmoto, Hiroshi, "Geochemistry of an Archean weathering profile, Steep Rock, Ontario, Canada," PSARC Annual Meeting. (May 2, 2000). (International)
43. Macpherson, G. L., "Summary of Research," Seminar, University of Kansas, Department of Geology, Lawrence, KS. (August 26, 1999). (Regional, Invited)
44. Macpherson, G. L., "Laser Ablation Microprobe ICPMS," Society of Atomic Spectroscopists, University of Kansas Chapter, Lawrence, KS. (March 4, 1998). (Regional, Invited)
45. 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). (Local, Invited)
46. Macpherson, G. L., "Redox zones and nitrate reduction," 12th Annual Water in the Future of Kansas Conference. Proceedings: p. 27-28 (1995). (Regional)
47. 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). (Regional, Invited)
48. Macpherson, G. L., "Nitrate in Limestone and Alluvial Aquifers, Kansas," Seminar, Kansas State University, Geology Department, Manhattan, KS. (March 16, 1995). (Regional, Invited)
49. Macpherson, G. L., & Schulmeister, M. K., "Nitrate in typical Kansas aquifers," 11th Annual Water and the Future of Kansas Conference. Proceedings: p. 24-25 (1994).

(Regional)

50. Macpherson, G. L., "Source(s), fate and residence time of nitrate in groundwater, a comparison of carbonate and alluvial aquifers," *Water Research in Kansas*, 1993: p. 5 (1994). (Regional)
51. Schwab, A. P., Rice, C. W., Dodds, W., Sophocleous, M., Banks, M. K., Koelliker, J. K., & Macpherson, G. L., "NSF EPSCoR - Biotic and abiotic factors controlling nitrogen flux in pristine and agricultural subsurface systems," 11th Annual Water and the Future of Kansas. Proceedings: p. 44 (1994). (Regional)
52. Macpherson, G. L., "Source(s), fate and residence time of nitrate in groundwater, a comparison of carbonate and alluvial aquifers," *Water Research in Kansas*, 1992: p. 6 (1993). (Regional)
53. Macpherson, G. L., "Hydrogeology of the Konza Prairie," Seminar, University of Kansas, Department of Geology, Lawrence, KS. (November 4, 1993). (Regional, Invited)
54. Macpherson, G. L., "Hydrogeology of the N4d watershed, Konza Prairie Research Natural Area, Kansas," 5th Annual Konza Prairie LTER Workshop: p. 27 (October 16, 1993). (Regional)
55. Schwab, A. P., Rice, C. W., Dodds, W. K., Banks, M. K., Koelliker, J. K., Macpherson, G. L., & Sophocleous, M., "NSF EPSCoR - Biotic and abiotic factors controlling nitrogen flux in pristine and agricultural subsurface systems," 5th Annual Konza Prairie LTER Workshop: p. 35 (October 16, 1993). (Regional)
56. Macpherson, G. L., "Hydrogeology of the Konza Prairie," KU Endowment Association Geology Associates Board Meeting, Lawrence, KS. (October 15, 1993). (Regional, Invited)
57. Macpherson, G. L., "Symmetry - the cube, octahedron, and dodecahedron and isocahedron," DANCE 340, Introduction to Laban Movement Analysis, Lawrence, KS. (September 21, 1993). (Local, Invited)
58. Dodds, W. K., Schwab, A. P., Rice, C. W., Banks, M. K., Macpherson, G. L., Koelliker, J. K., & Sophocleous, M., "Biotic and abiotic factors controlling nitrogen flux in pristine and agriculture subsurface systems," Fourth Annual Konza Prairie LTER Workshop: p. 6 (1992). (Regional)
59. Macpherson, G. L., "Low-temperature geochemistry of ground water at N04d watershed, Konza LTER site," 4th Annual Konza Prairie LTER Workshop: p. 19 (October 17, 1992). (Regional)
60. Macpherson, G. L., "Time-series analysis of ground-water chemistry at Konza Prairie," 3rd Annual Konza Prairie LTER Workshop. (October 19, 1991). (Regional)
61. Macpherson, G. L., "Geochemical modeling of Dakota Aquifer Fluids," Seminar, Kansas Geological Survey. (December 13, 1990). (Regional, Invited)
62. Inman, Dan L., & Macpherson, G. L., "Preliminary ground-water chemistry of the N4D watershed," 2nd Annual Konza Prairie LTER Workshop. Abstracts: p. 3 (August 23,



1990 - August 24, 1990). (Regional)

63. 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). (Regional, Invited)
64. Macpherson, G. L., "Symmetry - the cube, octahedron, and dodecahedron," University of Kansas, Dance Theory Class, Lawrence, KS. (September 21, 1989). (Local, Invited)
65. Macpherson, G. L., "Research Opportunities and Activities in Hydrogeology," Seminar, University of Kansas, Department of Geology, Lawrence, KS. (August 31, 1989). (Local, Invited)

## C. Grants and/or Other Funded Projects

### External Funding

#### Funded Proposals

1. Blair, J. M. (Principal), Baer, S. G. (Co-Investigator), Dodds, W. K. (Co-Investigator), Joern, A. (Co-Investigator), Nippert, J. B. (Co-Investigator), & Macpherson, G. L. *LTER VII: Long-Term Research on Grassland Dynamics – Assessing Sensitivity and Resilience to Global Change*. National Science Foundation, Long-Term Ecological Research Program, Submitted March 15, 2014 (November 1, 2014 - October 31, 2020). (Refereed/Competitive)  
Current Status: Funded  
Senior Personnel/subcontractor, \$150,000. Grant total: \$6,762,000
2. Whittemore, D. O. (Principal), Fowle, D. (Co-Investigator), Macpherson, G. L. (Co-Investigator), & Aguilar, J. (Co-Investigator). *Fate of High Uranium in Saline Arkansas River Water in Southwest Kansas: Distribution in Soils, Crops, and Groundwater*. U.S. Geological Survey, Water Resources Research Act (Section 104b), Kansas Water Resources Institute \$57,753, Submitted December 12, 2013 (January 1, 2014 - December 31, 2015). (Refereed/Competitive)  
Current Status: Funded
3. Blair, J. (Principal), Dodds, W. K. (Co-Principal), Hartnett, D. C. (Co-Principal), Joern, A. (Co-Principal), Nippert, J. B. (Co-Principal), & Macpherson, G. L. *Konza Prairie LTER VI: Grassland Dynamics and Long-Term Trajectories of Change (2008-2014)*. National Science Foundation, Long-Term Ecological Research Program (November 1, 2008 - October 31, 2014). (Refereed/Competitive)  
Current Status: Funded  
Researcher/Subcontractor, \$142,176. Grant total: \$5,640,000
4. Macpherson, G. L. (Principal). *Support of Development of Lithium Isotope Measurement as a Tool for Tracing Deep Fluids*. DOE-NETL-Pittsburgh (June 1, 2012 - May 31, 2013). (Invited Sole Source Contract)  
Current Status: Funded
5. Lewis, A. (Principal), Adams, C. (Co-Principal), Anderson, D. (Co-Principal),

Clowes, E. W. (Co-Principal), Mandel, R. (Co-Principal), Haufler, M. S., Hoopes, J. W., Johnson, W. C., Macpherson, G. L., Medina, M. A., Rosen, S. T., & Stinson, P. T. *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). (Invited Sole Source Contract)

Current Status: Funded

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.

6. 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). (Invited Sole Source Contract)

Current Status: Funded

7. Lewis, A. (Principal), Mandel, R. (Co-Principal), Dobson, J. E. (Co-Principal), Fawcett, S. (Co-Principal), Chauvin, K. (Co-Principal), Simpson, G. (Co-Principal), Tsutsui, W. (Co-Principal), Romzek, B. S. (Co-Principal), Johnson, P. E., Heilke, T. W., Schultz, J. A., Herlihy, P. H., Johnson, W. C., Hoopes, J. W., Macpherson, G. L., Stinson, P. T., Bibi, G., Afifi, R., & Bird, M. L. *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). (Invited Sole Source Contract)

Current Status: Funded

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

8. Blair, J. (Principal), Briggs, J. M. (Co-Principal), Hartnett, D. C. (Co-Principal), Johnson, L. C. (Co-Principal), Knapp, A. K. (Co-Principal), & Macpherson, G. L. *LTER V: Long-Term Ecological Research in Tallgrass Prairie - The Konza Prairie LTER Program, 2002-2008*. National Science Foundation, Long-Term Ecological Research Program (November 1, 2002 - October 31, 2008). (Refereed/Competitive)

Current Status: Funded

Researcher/Subcontractor, \$137,284. Grant total: \$3,980,000

9. Johnson, W. C. (Principal), Macpherson, G. L. (Co-Principal), & Johnson, L. (Co-Principal). *Konza Prairie Biological Station: Vertical Distribution of SOM  $\delta^{13}C$  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). (Invited Sole Source Contract)

Current Status: Funded

10. Johnson, W. C. (Principal), & Macpherson, G. L. (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). (Invited Sole Source Contract)

Current Status: Funded

11. Knapp, A. K. (Principal), Blair, J. M. (Co-Principal), Briggs, J. M. (Co-Principal), & Macpherson, G. L. *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 (November 1, 1996 - October 31, 2002). (Refereed/Competitive)  
 Current Status: Funded  
 Researcher/Subcontractor, \$111,000. Grant total: \$3,360,000
12. Macpherson, G. L. (Principal). *PSCARC: Laser Ablation Microprobe Analysis of a Precambrian Paleosol, Steep Rock, Canada*. Proposal to R. Capo, Penn-State Astrobiology Research Center (PSARC) \$3,862 (January 1, 2000 - December 31, 2001). (Invited Sole Source Contract)  
 Current Status: Funded
13. Macpherson, G. L. (Principal), & Johnson, W. C. (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). (Invited Sole Source Contract)  
 Current Status: Funded  
 Grant amount: \$25,000, plus supplement of \$5,000.
14. Johnson, L. (Principal), Blair, J. (Co-Principal), Dodds, W. K. (Co-Principal), Macpherson, G. L. (Co-Principal), & Terwilliger, V. (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). (Refereed/Competitive)  
 Current Status: Funded
15. 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). (Invited Sole Source Contract)  
 Current Status: Funded
16. Plank, T. A. (Principal), & Macpherson, G. L. (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). (Refereed/Competitive)  
 Current Status: Funded
17. Plank, T. A. (Principal), Macpherson, G. L. (Co-Principal), Goldstein, R. H. (Co-Principal), Van Schmus, W. R. (Co-Principal), Walker, J. D. (Co-Principal), & McKenna, L. W., 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). (Refereed/Competitive)

Current Status: Funded

18. Knapp, A. K. (Principal), Tate, C. M. (Co-Principal), Hartnett, D. C. (Co-Principal), Kaufman, D. W. (Co-Principal), & Macpherson, G. L. *ILTER 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 (November 1, 1991 - October 31, 1996). (Refereed/Competitive)  
 Current Status: Funded  
 Researcher/Subcontractor, \$39,900. Grant total: \$3,517,313
  
19. Schwab, A. P. (Principal), Rice, C. W. (Co-Principal), Dodds, W. K. (Co-Principal), Banks, M. K. (Co-Principal), Macpherson, G. L. (Co-Principal), Koelliker, J. K. (Co-Principal), & Sophocleous, M. (Co-Principal). *Biotic and Abiotic Factors Controlling Nitrogen Flux in Pristine and Agricultural Subsurface Systems*. K\*Star (NSF-EPSCOR) \$594,884 (August 1, 1992 - July 31, 1995). (Refereed/Competitive)  
 Current Status: Funded
  
20. Butler, J. J., Jr. (Principal), McElwee, C. D. (Co-Principal), & Macpherson, G. L. *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). (Refereed/Competitive)  
 Current Status: Funded  
 Contributor: G. L. Macpherson and others.
  
21. 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). (Refereed/Competitive)  
 Current Status: Funded
  
22. 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). (Refereed/Competitive)  
 Current Status: Funded
  
23. 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). (Refereed/Competitive)  
 Current Status: Funded
  
24. Macpherson, G. L. (Principal). *Equipment in Support of Water Chemistry* (Dionex 4000i series ion chromatograph, Bausch and Lomb Spectronix 2000 UV-Vis Spectrophotometer, and miscellaneous laboratory equipment worth approximately \$61,000) (Summer, 1990). (Not Refereed/Donation from OXY Petroleum)  
 Current Status: Funded

## Internal Funding

### University of Kansas

#### Internal Award

1. Sullivan, Pamela L., Billings, Sharon, Hirmas, Daniel, Macpherson, G. L. *Leveraging a karst CZO (Critical Zone Observatory) end member on the spectrum of system reactivity as an exemplar of Earth's CZ trajectories*. KU Major Project Planning Grant, \$38,966, submitted 3 April 2017.  
Current Status: In review
2. Macpherson, G. L., (Principal). *IBATE 2016, Recruiting URM Graduate Students: Instrument-Based Analytical Training Exchange*. KU Graduate School Award, \$1,500, October 2016 – June 2017. (Refereed/Competitive)  
Current Status: Funded
2. Macpherson, G. L., (Principal), Tsoflias, G. (co-Principal). *Evaluating Geophysical Imaging Methods in the Flint Hills, KS*. KU General Research Fund, \$15,365.54, July 1, 2016 – June 30, 2017. (Refereed/Competitive)  
Current Status: Funded
3. Macpherson, G. L. (Principal). *Energizing Energy: Producing the Energy Resource, Solving Associated Challenges with Water, Understanding Public Perception*. KU-Provost's Office, faculty cluster proposal, unlimited, Submitted April 2012 (October 2012 - 2016). (Refereed/Competitive)  
Current Status: Funded
4. Gonzalez, L. A., Roberts, J., Olcott-Marshall, A., Moeller, A., Macpherson, G. (Co-I), Tsoflias, G. *CLAS Course Transformation Initiative*, Department of Geology Transformation Initiative: Transforming Introductory Major and Service Courses to Enhance Student Learning. \$225,000. (Competitive)  
Current Status: Funded
5. Macpherson, G. L. (Principal). *Sorption Effects on Trace Metals Released during Reduction of Nitrate*. General Research Fund, University of Kansas \$2,084 (July 1, 1996 - June 30, 1997). This proposal funded laboratory experiments to investigate release of metals released when nitrate is reduced (to  $\text{NH}_4^+$  or  $\text{N}_2\text{O}$  or  $\text{N}_2$ ) and pyrite is oxidized, and sorption of those metals on clay minerals. (Refereed/Competitive)  
Current Status: Funded
6. Macpherson, G. L. (Principal). *Determination of Chemical Denudation Rates, Konza Prairie Research Natural Area, Kansas*. KU General Research Fund, New Faculty Grant Program. \$4,999, Submitted February 1990 (May 1990 - July 1991). This grant funded the costs of tritium and carbon-14 dating of groundwater at the Konza Tallgrass Prairie LTER site, in support of a Master's student thesis. (Refereed/Competitive)  
Current Status: Funded

#### D. Honors and Awards for Research

Geological Society of America Fellow (2017)

Leo M. and Robert M. Orth Water Resources Award. (2016)  
Professional Excellence Award, Association for Women Geoscientists. (October 2014)  
Certificate of Recognition, International Association of GeoChemistry. (June 2013)  
Recognition of research in groundwater CO<sub>2</sub>  
Leo M. and Robert M. Orth Water Resources Award. (2010)  
Leo M. and Robert M. Orth Water Resources Award. (2007)

## **SERVICE RECORD**

### **A. University Service**

The Graduate Dean's Special Working Group on the Recruitment, Funding, and Retention of Underrepresented Minority Graduate Students (October 8, 2015 – May, 2017)  
Climate (for Living, Learning, and Working at KU) Study Focus Group (February 22, 2016)  
Graduate Recruitment Support Awards Review Committee (September 2015)  
Faculty Search Committee, Geography. Member. (2007 - 2008)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. Organizer. (Spring 2007)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. Organizer. (Spring 2006)  
University Laser Safety Committee. Member. (1998 - 2005)  
Broadcast of CUASHI cyberseminars. Organizer. (Fall 2004)  
Faculty Search Committee, Geography/Atmospheric Science. Member. (2003 - 2004)  
Research Engineer replacement committee, Chemical and Petroleum Engineering Department. Member. (January 1999 - December 2000)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. Organizer. (Fall 1999)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. Organizer. (Fall 1998)  
HIP (Hydrogeology in Progress) Lunchtime Seminar. Organizer. (Fall 1997)  
Unit Director Review Committee. Co-Chair. (Spring 1996)

### **B. School/College Service**

Curriculum Changes Subcommittee of CLAS GSC. Chair. (2008 - 2010)  
CLAS Graduate Studies Committee. Member. (2007 - 2010)  
CLAS Academic Misconduct Hearing Board. Member. (2002 - 2005)  
CLAS Committee on Sabbatical Leave, Member. (1990-1992)

### **C. Department/Unit Service**

EEEC Edu Lobby Committee, Member. Geology. (Fall 2016 – Fall 2017)  
Domestic Minority Geology Doctoral Student Recruiting. Presenter. (Fall, 2015 – Spring 2016)  
Graduate Studies Committee. Chair. Geology. (2013 - 2017)  
Search Committee, Postdoctoral Teaching Fellow. Member. Geology. (2013)  
Executive Committee. Member. Geology. (2011 - Present)  
Undergraduate Honors. Coordinator. Geology. (Fall 2007 – Summer 2015)  
Undergraduate Research Experience Certification. Coordinator. Geology. (Fall 2007 – Summer 2015)  
Equipment and Facilities Committee, Geology Associates Advisory Board. Chair. Geology. (2007 - Present)  
Engineering Geology. Undergraduate Advisor. Geology. (2006 - Present)  
Graduate Studies Committee. Member. Geology. (2009 - 2013)  
Academic Misconduct Committee. Ad Hoc Member. Geology. (Spring 2013)  
Hydrogeology Faculty Search Committee. Chair. Geology. (2010 - 2011)

Ad Hoc Committee, Revision of Graduate Hydrogeology Curriculum. Chair. Geology. (2007 - 2009)  
 Promotion & Tenure Committee. Ad Hoc Member. Geology. (2007 - 2008)  
 Undergraduate Studies Committee. Member. Geology. (2004 - 2007)  
 Equipment and Facilities Committee, Geology Associates Advisory Board. Co-Chair. Geology. (2003 - 2006)  
 Undergraduate Studies Committee. Interim Chair. Geology. (Fall 2004)  
 Promotion & Tenure Committee. Ad Hoc Member. Geology. (2003 - 2004)  
 3rd Year Faculty Review Committee. Member. Geology. (2003 - 2004)  
 Neotectonics/Landscape Evolution Faculty Search Committee. Member. Geology. (2003 - 2004)  
 Graduate Studies Committee. Member. Geology. (2002 - 2004)  
 Search Committee, KU-PAL Lab Manager. Chair. Geology. (2000 - 2001)  
 Undergraduate Studies Committee. Chair. Geology. (1995 - 2001)  
 Hydrogeology Faculty Search Committee. Member. Geology. (1999 - 2000)  
 Ad Hoc Committee for Department of Geology Review of KGS Director candidates. Member. Geology. (Spring 1999)  
 Ad Hoc Committee for Justifying New Faculty Positions. Member. Geology. (Spring 1999)

#### **D. Professional Service outside the University**

##### International

American Chemical Society - Petroleum Research Fund, Reviewer, Grant Proposal.  
 NSERC (Natural Sciences and Engineering Research Council of Canada), Reviewer, Grant Proposal.  
*AAPG Environmental Geosciences*, Reviewer, Manuscript.  
*Applied Geochemistry*, Reviewer, Manuscript.  
*Bulletin, American Association of Petroleum Geologists*, Reviewer, Manuscript.  
*Carbonates and Evaporites*, Reviewer, Manuscript.  
*Compass*, Reviewer, Manuscript.  
*Current Research on Kansas Geology*, Reviewer, Manuscript.  
*Earth Science Reviews*, Reviewer, Manuscript.  
*Environmental Earth Sciences – Processes & Impacts*, Reviewer, Manuscript.  
*Geochimica et Cosmochimica Acta*, Reviewer, Manuscript.  
*Geology*, Reviewer, Manuscript.  
*Journal of Geophysical Research – Biogeosciences*, Reviewer, Manuscript.  
*Science of the Total Environment*, Reviewer, Manuscript.  
*Water Resources Research*, Reviewer, Manuscript.  
 SEPM Special Publications, Reviewer, Manuscript.  
 Prentice-Hall, Reviewer, Textbook.  
 International Association of GeoChemistry (IAGC), Social Network Coordinator. Facebook Page creation. (Fall 2010 - Present)  
*Environmental Geology* renamed *Environmental Earth Science*, Editorial Board Member. (January 1999 - Present)

*T116. Karst Critical Zone Evolution: The Rapid Responses of Carbonate Systems to Changes in Climate, Sea Level, Groundwater Pumping and Land Cover/Land-Use*, Geological Society of America Annual Meeting, Session Co-Chair (September 26, 2016)

International Association of GeoChemistry (IAGC)-Sponsored Session "Groundwater

and the Global Carbon Cycle," IAGS Applied Geochemistry Symposium, Convener. (June 1, 2009 - June 4, 2009)

*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, Organizer and Session Chair. (2005)

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

#### National

National Institutes for Water Research – USGS National Competitive Grants Program, Reviewer of Research Proposals.

National Science Foundation – Hydrologic Sciences Program, Reviewer of Research Proposals.

Environmental Protection Agency, Reviewer, Grant Proposal.

National Science Foundation - Graduate Research Fellowship Program, Reviewer, Grant Proposal.

National Science Foundation - Major Research Instrumentation Program, Reviewer, Grant Proposal.

National Science Foundation – Geobiology and Low-Temperature Geochemistry, Reviewer, Grant Proposal.

National Science Foundation Review Panel—Geobiology & Low-Temperature Geochemistry, Grant Panelist, Virtual Panel. (February 2015)

National Science Foundation Review Panel—Geobiology & Low-Temperature Geochemistry, Grant Panelist, Arlington, VA, USA. (November 4, 2014 - November 7, 2014)

National Science Foundation Review Panel—Geobiology & Low-Temperature Geochemistry, Grant Panelist, Arlington, VA, USA. (November 2013)

National Science Foundation Review Panel—Postdoctoral Awards—Geobiology & Low-Temperature Geochemistry, Grant Panelist, Virtual Panel. (November 2013)

National Science Foundation Review Panel—Geobiology & Low-Temperature Geochemistry, Grant Panelist, Arlington, VA, USA. (November 2009)

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

Kansas Water Resources Research Institute Policy Committee and Executive Committee, Member. (Fall 1991 - 1996)

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

#### State

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

#### Local

Hidden Valley Site Committee, Member. 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)

Friends of Hidden Valley, Volunteer, hydrogeology and geology consultant, Lawrence, KS, 66049. (2000 - Present)

Hidden Valley Site Committee, Board of Directors. (2001 - 2003)

Hidden Valley Site Committee, Chair. (2001 - 2003)



**E. Service Presentations**

- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 14 February 2018. *(Invited)*
- "Is it harassment or not? A workshop for women and men." AGU Fall Meeting, San Francisco. 13 December 2016. *(Invited)*
- "To the Wolves: A Workshop to Explore Hostility toward Women in the Workplace and in Academia." Association for Women Geoscientists, Laramide Chapter, Denver, CO. 4 November 2016. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 4 October 2016. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 2 March 2016. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 15 September 2015. *(Invited)*
- "To the Wolves: A Workshop to Explore Hostility toward Women in the Workplace and in Academia." Department of Geography, KU, Lawrence, KS. 17 April 2015. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 21 January 2015. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 19 November 2014. *(Invited)*
- "To the Wolves: Practice in Reacting to Hostility toward Women in Academia, Business and Government." Association for Women Geoscientists, Osage Chapter, KU, Lawrence, KS. 19 November 2014. *(Invited)*
- "To the Wolves: Dealing with Hostility Toward Women in the Workplace." Association for Women Geoscientists, Osage Chapter and Department of Geology, KU, Lawrence, KS. 22 April 2014. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 26 February 2014. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 4 September 2013. *(Invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 27 March 2013 *(invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 28 September 2011 *(invited)*
- "Careers in the Geosciences." Haskell Indian Nations University, Careers in Sciences course, HINU, Lawrence, KS. 16 February 2011. *(invited)*
- "What to Do if it Happens to You: Reactions to Hostility toward women professionals." KU, Lawrence, KS. 22 February 2003. *(invited)*
- "What to Do if it Happens to You: Hostility toward and Belittlement of Women in the Sciences, Math, and Engineering." Student Chapter, Society of Women Engineers, Lawrence, KS, 4 November 2000. *(invited)*
- "Dealing with Hostility Toward Women in the Sciences." WiSE (Women in Science and Engineering, informal KU group), KU, Lawrence, KS, 3 December 1999.
- "To the Wolves: Hostility toward Women in Science."

**F. Honors and Awards for Service**

- Friends of Hidden Valley (Lawrence, KS) Honor Bench (2017)
- Graduate Student Recruitment Support Award, \$1,500, to pay for travel underrepresented-group doctoral students to visit our labs, in order to encourage them to apply to our programs. (October 4, 2016 – June 30, 2017)

Graduate Student Recruitment Support Award, \$3,000, to visit three minority-serving institutions and recruit underrepresented-group doctoral students. (September 30, 2015 – June 30, 2016)

Outstanding Reviewer, Earth Science Reviews (top 10<sup>th</sup> percentile over past two years; May 2015)

Professional Excellence Award, Association for Women Geoscientists. (October 2014)

Certificate of Recognition, International Association of GeoChemistry. (June 2013)

Recognition of efforts to attract young scientists to the Society through social media

#### **PROFESSIONAL MEMBERSHIPS/HONOR SOCIETIES**

American Geophysical Union

Association for Women Geoscientists

Geological Society of America

International Association for GeoChemistry

International Association of Hydrogeologists

The Geochemical Society