

# Patrick Mickler

## Professional Summary

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## Professional Preparation

### Academic Background

Ph.D. Geology, The University of Texas at Austin, May 2004

M.S. Geology, University of Cincinnati, May 1998

B.A. Geology, State University of New York at Buffalo, January 1992

### Professional Appointments

Present Position: Research Associate, Bureau of Economic Geology, The University of Texas at Austin (September 2011 - Present).

Lecturer, The California State University, Bakersfield (September 2006 - September 2009). Courses in Physical Geology, Historical Geology, Geomorphology, Petrology/Petrography, Field Methods in Geology, Graduate and Undergraduate Sedimentology, Mineralogy, and Physical Hydrogeology, as well as several other general education science classes.

Visiting Faculty, Postdoctoral Research Scientist, The University of North Carolina at Chapel Hill (December 2004 - July 2006). Undergraduate course in physical geology and upkeep and operation of radiogenic isotope clean-lab facility, emphasizing Sr and Pb isotopic analyses of geologic and archeological materials.

Graduate Student Research Assistant and Teaching Assistant, Department of Geological Sciences, The University of Texas at Austin (September 1996 - May 2004). Characterization of porosity of carbonates from Gwar field, Saudi Arabia, and integration of petrographic data with laboratory permeability and total porosity data; teaching of undergraduate laboratory classes in sedimentary geology, assisting with the geologic summer field school, supervision of class projects for Environmental Isotope Geochemistry and mentoring of students on critical writing exercises for honors freshman seminar in environmental sciences, sedimentology laboratory instructor for Dr. Earle McBride and Dr. Bob Folk, assisting Dr. Charles Kerans on field trips centered in the Permian Reef complex, Carlsbad, New Mexico; analysis of cave calcite using U-Th series dating, analysis of U and Th isotopes on thermal ionization mass spec., analysis of carbon and oxygen isotopes of cave calcite on dual inlet mass spec., assisting in the running of isotope clean lab.

Graduate Student Laboratory Instructor, Department of Geology, University of Cincinnati (September 1994 - September 1996). Undergraduate laboratory classes in general geology.

Assistant Project Supervisor, Elm Ridge Management Incorporated, Elmsford, NY (March 1994 - September 1994). Supervisor of construction of large apartment complex in Elmsford, NY.

Geologist, Advanced Testing Company, New Windsor, NY (March 1993 - March 1994). Laboratory testing and field inspection in several areas of construction concentrating on

the engineering testing of soils.

Soils Laboratory Technician, Empire Soils Investigations Incorporated, Middleport, NY (February 1992 - September 1992). Engineering testing of contaminated and uncontaminated soils.

## Theses

Origins of Lower Paleozoic black shales: a consequence of anoxic oceanic deepwaters or an underdeveloped burrowing infauna?

## Dissertations

Controls on the stable isotopic composition of speleothems, Barbados, West Indies

## Areas of Expertise

### Areas of Expertise

Effects of soil, CO<sub>2</sub>, and organic-matter productivity on C isotopic compositions of cave waters and subsequent speleothem formations

Kinetic and equilibrium isotope effects in C and O isotopic compositions of calcite speleothems

Methane migration to shallow aquifers

Sr and Pb isotopes in human tissues as an archeology/forensic tool

Terrestrial climate changes in the tropics

Water-rock supercritical CO<sub>2</sub> interactions under high pressure and temperature

## Awards

### Awards and Honorary Societies

Geological Society of America Research Grant (\$2300 for Ph.D.); proposal recognized by GSA for exceptional merit in conception and presentation, 2002

Graduate Research Traineeship from NSF (1 year support and research funds for Ph.D. research), 1999

Geological Society of America Research Grant (\$1500 for Master's research), 1995

Rawlinson Fellowship (summer support for Master's research), 1995

## Service

### University Committees

Co-organizer, Friday Seminar Series, Bureau of Economic Geology, The University of Texas at Austin, 2018-2019

### External Committees Participation

Supervisor, Undergraduate student research, California State University, Bakersfield, 2009 - present

Member and CREST grant host, Sarah Freeman thesis

Member and CREST grant host, Tze Wee (Bibi) Tan thesis

Lab Radiation Safety Officer, The University of Texas at Austin, 1998 - 2004

Student Chairperson, Technical Sessions, The University of Texas at Austin, Department of Geological Sciences, 2001

## Teaching and Advising

### Student Committee Participation

Member, MS thesis, Peter Carlson, The University of Texas at Austin, 2018

Member and CREST grant host, MS thesis, Cristina Rivas, California State University, Bakersfield, 2016

Member, MS thesis, John Wilson, California State University, Bakersfield, 2014

## Presentations

### Presentations

Attribution of Natural Gas in Shallow Groundwater Using Dissolved Nitrogen and Alkane Chemistry in Parker County, Texas: presented to Goldschmidt Conference, presented at Yokohama, Japan, July 2016.

Tracing natural gas transport into shallow groundwater using dissolved nitrogen and alkane chemistry in Parker County, Texas: presented to American Geophysical Union (AGU) Annual Meeting, San Francisco, Calif., December 2015.

## Publications

### Peer Reviewed Journal Articles

Mickler, P., Carlson, P., Banner, J. L., Breecker, D. O., Stern, L., and Guilfoyle, A., 2019, Quantifying carbon isotope disequilibrium during in-cave evolution of drip water along discrete flow paths: *Geochimica et Cosmochimica Acta*, v. 244, p. 182-196, <http://doi.org/10.1016/j.gca.2018.09.027>.

Darvari, R., Nicot, J.-P., Scanlon, B. R., Mickler, P., and Uhlman, K., 2018, Trace element behavior in methane-rich and methane-free groundwater in north and east Texas: *Groundwater*, v. 56, no. 5, p. 705-718, <http://doi.org/10.1111/gwat.12606>.

Larson, T., Nicot, J.-P., Mickler, P., Castro, M. C., Darvari, R., Wen, T., and Hall, C. M., 2018, Monitoring stray natural gas in groundwater with dissolved nitrogen. An example from Parker County, Texas: *Water Resources Research*, v. 54, no. 9, p. 6024-6041, <http://doi.org/10.1029/2018WR022612>.

Nicot, J.-P., Gherabati, A., Darvari, R., and Mickler, P., 2018, Salinity reversal and water freshening in the Eagle Ford Shale, Texas, USA: *ACS Earth and Space Chemistry*, v. 2, no. 11, p. 1087-1094, <http://doi.org/10.1021/acsearthspacechem.8b00095>.

Lu, J., Darvari, R., Nicot, J.-P., Mickler, P., and Hosseini, S. A., 2017, Geochemical impact of injection of Eagle Ford brine on Houston sandstone formation--observations of autoclave water-rock interaction experiments: *Applied Geochemistry*, v. 84, p. 26-40, <http://doi.org/10.1016/j.apgeochem.2017.06.002>.

Lu, J., Mickler, P., Nicot, J.-P., Choi, W., Esch, W. L., and Darvari, R., 2017, Geochemical interactions of shale and brine in autoclave experiments--understanding mineral reactions during hydraulic fracturing of Marcellus and Eagle Ford Shales: *AAPG Bulletin*, v. 101, no. 10, p. 1567-1597, <http://doi.org/10.1306/11101616026>.

Nicot, J.-P., Larson, T., Darvari, R., Mickler, P., Sloten, M., Aldridge, J., Uhlman, K., and Costley, R., 2017, Controls on methane occurrences in shallow aquifers overlying the Haynesville Shale gas field, East Texas: *Groundwater*, v. 55, no. 4, p. 443-454, <http://doi.org/10.1111/gwat.12500>.

Nicot, J.-P., Larson, T., Darvari, R., Mickler, P., Uhlman, K., and Costley, R., 2017, Controls on methane occurrences in aquifers overlying the Eagle Ford Shale play, South Texas: *Groundwater*, v. 55, no. 4, p. 455-468, <http://doi.org/10.1111/gwat.12506>.

Nicot, J.-P., Mickler, P., Larson, T., Castro, M. C., Darvari, R., Uhlman, K., and Costley, R., 2017, Methane occurrences in aquifers overlying the Barnett Shale play with a focus on Parker County, Texas: *Groundwater*, v. 55, no. 4, p. 469-481, <http://doi.org/10.1111/gwat.12508>.

Wen, T., Castro, M. C., Nicot, J.-P., Hall, C. M., Pinti, D. L., Mickler, P., Darvari, R., and Larson, T., 2017, Characterizing the noble gas isotopic composition of the Barnett Shale and Strawn Group and constraining the source of stray gas in the Trinity Aquifer, North-Central Texas: *Environmental Science & Technology*, v. 51, no. 11, p. 6533-6541, <http://doi.org/10.1021/acs.est.6b06447>.

Lu, J., Mickler, P., Nicot, J.-P., Yang, C., and Darvari, R., 2016, Geochemical impact of O<sub>2</sub> impurity in CO<sub>2</sub> stream on carbonate carbon-storage reservoirs: *International Journal of Greenhouse Gas Control*, v. 47, p. 159-175, <http://doi.org/10.1016/j.ijggc.2016.01.039>.

Lu, J., Nicot, J.-P., Mickler, P., Ribeiro, L. H., and Darvari, R., 2016, Alteration of Bakken reservoir rock during CO<sub>2</sub>-based fracturing--An autoclave reaction experiment: *Journal of Unconventional Oil and Gas Resources*, v. 14, p. 72-85, <http://doi.org/10.1016/j.juogr.2016.03.002>.

Wen, T., Castro, M. C., Nicot, J.-P., Hall, C. M., Larson, T., Mickler, P., and Darvari, R., 2016, Methane sources and migration mechanisms in shallow groundwaters in Parker and Hood counties, Texas--A heavy noble gas analysis: *Environmental Science & Technology*, v. 50, no. 21, p. 12012-12021, <http://doi.org/10.1021/acs.est.6b01494>.

Lu, J., Mickler, P., Nicot, J. -P., Yang, C., and Romanak, K. D., 2014, Geochemical impact of oxygen on siliciclastic carbon storage reservoirs: *International Journal of Greenhouse Gas Control*, v. 21, p. 214-231, <http://doi.org/10.1016/j.ijggc.2013.12.017>

Yang, C., Hovorka, S. D., Delgado-Alonso, J., Mickler, P. J., Treviño, R. H., and Phillips, S., 2014, Field demonstration of CO<sub>2</sub> leakage detection in potable aquifers with a pulseline CO<sub>2</sub>-release test: *Environmental Science and Technology*, v. 48, no. 23, p. 14031-14040, <http://doi.org/10.1021/es5044003>.

Yang, C., Treviño, R. H., Zhang, T., Romanak, K. D., Kerstan, W., Lu, J., Mickler, P., and Hovorka, S. D., 2014, Regional assessment of CO<sub>2</sub>-solubility trapping potential: a case study of the coastal and offshore Texas Miocene interval: *Environmental Science and Technology*, v. 48, p. 8275-8282, <http://doi.org/10.1021/es502152y>.

Mickler, P., Yang, Changbing, Scanlon, B. R., Reedy, R. C., and Lu, Jiemin, 2013, Potential impacts of CO<sub>2</sub> leakage on groundwater chemistry from laboratory batch experiments and field push-pull tests: *Environmental Science & Technology*, v. 47, p. 10694-10702, doi: 10.1021/es401455j.

Yang, Changbing, Mickler, P., Reedy, R. C., Scanlon, B. R., Romanak, Katherine, Nicot, J. -P., Hovorka, S. D., Treviño, R. H., and Larson, T., 2013, Single-well push-pull test for assessing potential impacts of CO<sub>2</sub> leakage on groundwater quality in a shallow Gulf Coast aquifer in Cranfield, Mississippi: *International Journal of Greenhouse Gas Control*, v. 18, p. 375-387.

Mickler, P., Stern, L., and Banner, J., 2006, Kinetic isotope effects in modern speleothems: *Geological Society of America Bulletin*. v. 118, no. 1-2, p. 65-81.

Mickler, P., Banner, J., Stern, L., Asmerom, Y., Edwards, L. A., and Ito, E., 2004, Stable isotope variations in modern tropical speleothems: evaluating applications to paleoenvironmental reconstructions: *Geochimica et Cosmochimica Acta*, v. 68, no. 21, p. 4381-4393.

Mickler, P., Ketcham, R. A., Colbert, M. W., and Banner, J., 2004, Application of high-resolution X-ray computed tomography in determining the suitability of speleothems for use in paleoclimatic, paleohydrologic reconstructions: *Journal of Cave and Karst Studies*, v. 66, no. 1, p. 4-8.

## Peer Reviewed Book Chapters

Nicot, J.-P., Lu, J., Mickler, P., and Solano, S. V., 2015, Chapter 26: Impact of CO<sub>2</sub> impurities on storage performance and assurance, in Karl F. Gerdes, ed., *Carbon dioxide capture for storage in deep geologic formations--Results from the CO<sub>2</sub> Capture Project, Volume 4: CCS*

Technology Development and Demonstration Results (2009-2014): UK, CPL Press, p. 385-400.

## Non Peer Reviewed Journal Articles

Lu, J., Mickler, P., and Nicot, J. -P., 2014, Geochemical impact of oxygen impurity on siliciclastic and carbonate reservoir rocks for carbon storage: Energy Procedia, Proceedings of 12th International Conference on Greenhouse Gas Control Technologies GHGT12, October 5-9, 2014, Austin, Texas, v. 63, p. 4782-4798, <http://doi.org/10.1016/j.egypro.2014.11.509>.

Mickler, P., Yang, C., Lu, J., and Lankford, K., 2014, Laboratory batch experiments and geochemical modelling of water-rock-super critical CO<sub>2</sub> reactions in Gulf of Mexico Miocene rocks: implications for future CCS projects: Energy Procedia, v. 63, p. 5512-5521, <http://doi.org/10.1016/j.egypro.2014.11.584>.

Smyth, R. C., Hovorka, S. D., Romanak, K. D., Wolaver, B. D., Mickler, P., and Yang, C., 2014, Monitoring CO<sub>2</sub>: The quest for a clean signal (examples from UT Austin BEG research): Energy Procedia, Proceedings of 12th International Conference on Greenhouse Gas Control Technologies GHGT12, v. 63, p. 4035-4042, <http://doi.org/doi: 10.1016/j.egypro.2014.11.435>.

Yang, C., Delgado-Alonso, J., Hovorka, S. D., Mickler, P., Treviño, R. H., and Phillips, S., 2014, Monitoring dissolved CO<sub>2</sub> in groundwater for CO<sub>2</sub> leakage detection in a shallow aquifer: Energy Procedia, v. 63, p. 4209-4215, <http://doi.org/10.1016/j.egypro.2014.11.456>.

Nicot, J. -P., Solano, Silvia, Lu, Jiemin, Mickler, P., Romanak, Katherine, Yang, Changbing, and Zhang, X., 2013, Potential subsurface impacts of CO<sub>2</sub> stream impurities on geologic carbon storage: Energy Procedia, v. 37, Proceedings of 11th International Conference on Greenhouse Gas Control Technologies GHGT11, November 18-22, Kyoto, Japan, p. 4552-4559.

## Contract Reports

Wolaver, B. D., Sun, A. Y., Caldwell, T., Smyth, R. C., Mickler, P., Bongiovanni, T., Pierre, J. P., Sharp, J. M., Jr., Uliana, M., and Breton, C., 2019, Report on year one preliminary results: hydrogeologic evaluation and vulnerability analysis for Balmorhea-area springs: Bureau of Economic Geology, The University of Texas at Austin, Annual Report prepared for Apache Corporation, 52 p.

Hosseini, S. A., Nicot, J.-P., Darvari, R., Costley, R., Lu, J., Sava, D., Goudarzi, A., Mickler, P., Banerji, D., Uhlman, K., Walden, S., Hentz, T. F., Hamlin, H. S., Ganjdanesh, R., Sun, A. Y., Hovorka, S. D., and Scanlon, B. R., 2016, Pressure management and plume control strategies through a brine extraction storage test at the Devine Test Site in Texas, Phase I: Bureau of Economic Geology, The University of Texas at Austin, Topical Report prepared for DOE NETL, under contract no. DE-FE0026137, 157 p.

Nicot, J.-P., Lu, J., Mickler, P., and Darvari, R., 2015, A Study of Rock-Water Interactions during CO<sub>2</sub>-Aided Fracturing (Bakken Formation): Bureau of Economic Geology, The University of Texas at Austin, contract report prepared for Statoil Research and Technology, 45 p.

Nicot, J.-P., Mickler, P., Larson, T., Castro, M. C., Darvari, R., Smyth, R. C., Uhlman, K., and Omelon, C., 2015, Understanding and managing environmental roadblocks to shale gas development: an analysis of shallow gas, NORM, and trace metals: Bureau of Economic Geology, The University of Texas at Austin, Contract Report prepared for RPSEA, under contract no. 11122-56, 272 p.

Nicot, J.-P., Mickler, P., Lu, J., and Darvari, R., 2015, A Study of Rock-Water Interactions During Hydraulic Fracturing (Barnett Shale): Bureau of Economic Geology, The University of Texas at Austin, contract report prepared for ExxonMobil Exploration Company, 114 p.

Nicot, J.-P., Mickler, P., Lu, J., and Darvari, R., 2015, A study of rock-water interactions during hydraulic fracturing (Eagle Ford Shale): Bureau of Economic Geology, The University of Texas at Austin, contract report prepared for ExxonMobil Exploration Company, 100 p.

Nicot, J.-P., Mickler, P., Lu, J., and Darvari, R., 2015, A Study of Rock-Water Interactions during

Hydraulic Fracturing (Marcellus Shale): Bureau of Economic Geology, The University of Texas at Austin, contract report prepared for Statoil Research and Technology, 194 p.

Treviño, R. H., Meckel, T., Carr, D. L., Yang, C., Lu, J., Mickler, P., Wallace, K. J., Nicholson, A. J., Bangs, N. L., Hornbach, M. J., Mulcahy, F. J., and Martinez, N., 2015, Gulf of Mexico Miocene CO<sub>2</sub> site characterization mega transect: Final report (revised) prepared for U.S. Department of Energy National Energy Technology Laboratory and Texas General Land Office, under contract no. DE-FE0001941 and GLO contract no. 10-205-000-4100, 583 p.

Hovorka, S. D., Nicot, J. -P., Zeidouni, M., Sun, A. Y., Yang, C., Sava, D., Mickler, P., and Remington, R. L., 2014, Expert-based development of a standard in CO<sub>2</sub> sequestration monitoring technology: Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin, final report prepared for Project STAR#R834384, under Funding Opportunity Number EPA-G2008-STAR-H1: Integrated Design, Modeling, and Monitoring of Geologic Sequestration of Anthropogenic Carbon Dioxide to Safeguard Sources of Drinking Water, 52 p.

Hovorka, S. D., Nicot, J. -P., Zeidouni, M., Sun, A. Y., Yang, Changbing, Sava, Diana, Mickler, P., Remington, R. L., 2014, Expert-based development of a standard in CO<sub>2</sub> sequestration monitoring technology: Gulf Coast Carbon Center, Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin, Project STAR#R834384 conducted under Funding Opportunity Number EPA-G2008-STAR-H1: Integrated Design, Modeling, and Monitoring of Geologic Sequestration of Anthropogenic Carbon Dioxide to Safeguard Sources of Drinking Water.

Nicot, J.-P., Mickler, P., Lu, J., and Darvari, R., 2014, Optimizing Water-Rock Interactions to Reduce Water Footprint in Unconventional Shale Plays: Bureau of Economic Geology, The University of Texas at Austin, contract report prepared for Shell-UT Unconventional Research (SUTUR), 154 p.

Nicot, J. -P., Lu, C., Mickler, P., Yang, A. L., Romanak, Katherine, and Zhang, T., 2013, Impact of CO<sub>2</sub> impurities on storage performance and assurance; Tasks 3 and 4: Geochemistry: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for CO<sub>2</sub> Capture Project (CCP) Phase III, 224 p.

Smyth, R. C., Nuñez López, Vanessa, Hovorka, S. D., Wolaver, B. D., Hosseini, S. A., Ambrose, W. A., Lu, Jiemin, Mickler, P., Zahid, K., Zeidouni, M., and Sun, A. Y., 2013, Draft final monitoring plan report, Phase I at West Ranch Field: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for NRG Energy Company, Petra Nova LLC, DOE Award Number: DE-FE-0003311.

Smyth, R. C., Nuñez, Vanessa, Hovorka, S. D., Wolaver, B. D., Hosseini, S. A., Ambrose, W. A., Lu, Jiemin, Mickler, P., Zahid, K., Zeidouni, M., Sun, A. Y., 2013, Monitoring Plan Report: Phase I at West Ranch Field, Gulf Coast Carbon Center at the Bureau of Economic Geology, a unit of The University of Texas at Austin, draft final report, prepared for NRG Energy Inc., Petra Nova LLC, DOE award number DE-FE-0003311.

## Published Reports

Yang, C., Mickler, P., and Scanlon, B. R., 2013, Groundwater degradation from carbon dioxide at geological carbon sequestration sites: Water Research Foundation, Web Report, no. 4265, 127 p.

## Published Abstracts

Castro, M. C., Han, G., Larson, T., Nicot, J.-P., Hall, C. M., and Mickler, P., 2018, Eagle Ford Shale--A Compartmentalized Reservoir? Insights from a Noble Gas Study (abs.): Abstract H211-1749, presented at 2018 AGU Fall Meeting, Washington, D.C., 10-14 Dec.

Han, G., Castro, M. C., Larson, T., Nicot, J.-P., Hall, C. M., and Mickler, P., 2018, Compartmentalization of the Eagle Ford Shale, South Texas - A noble gas investigation (abs.):

Geological Society of America Abstracts with Programs, v. 50, no. 6, <http://doi.org/abs/2018AM-320911>.

Nicot, J.-P., Gherabati, A., Darvari, R., and Mickler, P., 2018, Salinity Reversal and Water Freshening in the Eagle Ford Shale (abs.): Abstract H21I-1750, presented at 2018 AGU Fall Meeting, Washington, D.C., 10-14 Dec.

Castro, M. C., Wen, T., Nicot, J.-P., Hall, C. M., Pinti, D. L., Mickler, P., Darvari, R., and Larson, T., 2017, Barnett Shale or Strawn Group: identifying the source of stray gas through noble gases in the Trinity Aquifer, North-Central Texas (abs.): Abstract H51L-05 presented at 2017 Fall Meeting, AGU, New Orleans, La., 11-15 Dec.

Castro, M. C., Wen, T., Nicot, J.-P., Hall, C. M., Mickler, P., and Darvari, R., 2016, Methane sources in shallow groundwaters in Parker and Hood Counties, Texas: a heavy noble gas analysis (abs.): Goldschmidt Conference, June 16 - July 1, Yokohama, Japan, p. 384.

Larson, T. E., Nicot, J.-P., Mickler, P., and Darvari, R., 2016, Attribution of natural gas in shallow groundwater using dissolved nitrogen and alkane chemistry in Parker County, Texas (abs.): Goldschmidt Conference, June 16 - July 1, Yokohama, Japan, p. 1679.

Wen, T., Castro, M. C., Nicot, J.-P., Hall, C. M., Mickler, P., and Darvari, R., 2016, Identifying the sources of methane in shallow groundwaters in South-Central Texas through noble gas signatures (abs.): June 20, AAPG Annual Convention and Exhibition, Calgary, Alberta, Canada.

Wen, T., Castro, M. C., Nicot, J.-P., Hall, C. M., Mickler, P., and Darvari, R., 2016, Methane sources and migration mechanisms in the shallow Trinity Aquifer in Parker and Hood Counties, Texas - a noble gas analysis (abs.): Abstract H31A-1347 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.

Larson, T., Nicot, J.-P., Mickler, P., and Darvari, R., 2015, Tracing natural gas transport into shallow groundwater using dissolved nitrogen and alkane chemistry in Parker County, Texas (abs.): AGU Fall Meeting, December 14-18, San Francisco, Calif., H21E-1423.

Lu, J., Mickler, P., and Nicot, J.-P., 2015, Geochemical interaction of Middle Bakken reservoir rock and CO<sub>2</sub> during CO<sub>2</sub>-based fracturing (abs.): AGU Fall Meeting, December 14-18, San Francisco, Calif., H31E-1450.

Nicot, J.-P., Mickler, P., Larson, T., Darvari, R., and Smyth, R. C., 2015, Dissolved methane occurrences in aquifers in the footprint of Texas shale plays and their controls (abs.): AGU Fall Meeting, December 14-18, San Francisco, Calif., H31E-1456.

Zou, Y., Yang, C., Guzman, N., Delgado, J., Mickler, P., Hovorka, S. D., and Treviño, R. H., 2015, Field demonstration of CO<sub>2</sub> leakage detection and potential impacts on groundwater quality at Brackenridge Field Laboratory (abs.): AGU Fall meeting, San Francisco, December 14-18, 2015.

Lu, J., Mickler, P., and Nicot, J.-P., 2014, Using SEM analysis on ion-milled shale surface to determine shale-fracturing fluid interaction (abs.): American Geophysical Union Fall Meeting, San Francisco, Calif., V51D-4800.

Nicot, J. -P., Mickler, P., Hildenbrand, Z. L., Larson, T., Darvari, R., Uhlman, K., Smyth, R. C., and Scanlon, B. R., 2014, Preliminary results of dissolved methane sampling in the footprint of Texas shale plays (abs.): Geological Society of America Abstracts with Programs, v. 46, no. 6, p. 692.

Nicot, J. -P., Mickler, P., Hildenbrand, Z., Larson, T., Darvari, R., Uhlman, K., Smyth, R. C., and Scanlon, B. R., 2014, Screening for dissolved methane in groundwater across Texas shale plays (abs.): 2014 American Geophysical Union Fall Meeting, San Francisco, California, December 15-19, 2014, no. H23C-0895.

Yang, C., Delgado, J., Hovorka, S. D., Mickler, P., Treviño, R. H., and Phillips, S., 2014, Monitoring dissolved CO<sub>2</sub> in groundwater for CO<sub>2</sub> leakage detection in a shallow aquifer (abs.):

Program with abstracts, GHGT-12, Austin, TX, Oct. 6-9.

Mickler, P., Lu, Jiemin, and Nicot, J. -P., 2013, Water-shale interactions in bench-top and high pressure/high temperature autoclave experiments: Identifying geochemical reaction controlling flow back water chemistry: Abstract H53B-1418 presented at 2013 Fall Meeting, AGU, San Francisco, California, 9-13 Dec.

Yang, Changbing, Delgado, J., Philips, S. B., Mickler, P., and Guzman, N., compiler, 2013, A field control release test for assessing plausibility of dissolved CO<sub>2</sub> measurements for CO<sub>2</sub> leakage detection in a shallow aquifer (abstract V41A-2757): 2013 AGU fall meeting, Dec. 7 to 13, San Francisco, CA, USA.

Mickler, P., Yang, Changbing, Lu, Jiemin, Reedy, R. C., and Scanlon, B. R., 2012, Low temperature-pressure batch experiments and field push-pull tests: assessing potential effects of an unintended CO<sub>2</sub> release from CCUS projects on groundwater chemistry (abs.), in AGU Fall Meeting, December 3-7, San Francisco.

Smyth, R. C., Yang, C., Romanak, K., Mickler, P., Lu, J., and Hovorka, S. D., 2012, Detecting potential impacts of deep subsurface CO<sub>2</sub> injection on shallow drinking water (abs.), in AGU Fall Meeting, December 3-7, San Francisco, California.

Yang, Changbing, Mickler, P., Reedy, R. C., and Scanlon, B. R., 2012, Assessing Potential Impacts of CO<sub>2</sub> Leakage on Shallow Groundwater Quality in the SECARB Phase III Early Test site Using Single-well Push-Pull Tests, 2012 AGU fall meeting, Dec. 3 to 7, 2012, San Francisco, CA, USA (abs. and oral presentation).

Banner, J., Mickler, P., Mack, L. E., James, E. W., Cooke, J., and Stern, L., 2002, Applications of cave deposits to temporal hydrologic and environmental change (abs.): *Journal of Cave and Karst Studies*, v. 64, no. 3, p. 183.

Mickler, P., Banner, J., Stern, L., Edwards, L. A., and Ito, E., 2002, Kinetic and equilibrium controls on speleothem isotopic variations (abs.): *Geological Society of America Abstracts with Programs*, v. 34, no. 6, p. 176.

Mickler, P., Banner, J., Asmerom, Y., Edwards, L. A., and Ito, E., 2001, Evaluation of isotopic equilibrium during precipitation of modern speleothem calcite in a tropical setting (abs.): *Geological Society of America Abstracts with Programs*, v. 33, no. 7, p. 143.

Friedhoff, M. J., Mickler, P., Goldberg, R. A., Hoffman, D. L., Maynard, J. B., Huff, W. D., and Triplehorn, D., 1996, Polygenetic history of the Olive Hill Clay (Pennsylvanian) in eastern Kentucky (abs.): *Geological Society of America Abstracts with Programs*, v. 28, no. 3, p. 56.

Mickler, P., 1996, Oxygen-related ichnocoenoses and their effect on sediment geochemistry of the Utica-Martinsburg Shale contact (Upper Ordovician, New York State) (abs.): *Geological Society of America Abstracts with Programs*, v. 28, no. 7, p. 89.

Mixon, D., Ragsdale, M., Summer Engel, A., Krekeler, M. P. S., Mickler, P., and Scott, A., 1996, Clay mineralogy of some clastic cave deposits from Great Saltpetre Cave, Kentucky; detrital and authigenic minerals (abs.): *Geological Society of America Abstracts with Programs*, v. 28, no. 7, p. 307

Mickler, P., Algeo, T. J., and Hower, J. C., 1995, Origin of lower Paleozoic black shales: A consequence of anoxic oceanic deepwaters or an underdeveloped burrowing infauna? (abs.): *Geological Society of America Abstracts with Programs*, v. 27, no. 6, p. 326.