

Katherine D. Romanak

Professional Summary

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Academic Background

B.S. Geology, Southern Methodist University, Dallas, Texas, 1984
M.S. Geology, The University of Texas at Arlington, 1988
Ph.D. Geology, The University of Texas at Austin, 1997

Areas of Expertise

- A. Carbonate equilibria/carbon cycling.
- B. Soil-gas and aqueous geochemistry.
- C. Shallow geochemical monitoring at carbon sequestration sites.
- D. Geochemical modeling (PHREEQC, WATEQ4F, NETPATH).
- E. Microbial geochemistry.
- F. Fate and transport of organic contaminants.

Professional Work Experience

- A. Present Position: Research Associate, Bureau of Economic Geology, The University of Texas at Austin (June 2008 - Present).

Potential impacts of CO₂-enhanced oil recovery on shallow groundwater resources Southwest Carbon Partnership Phase II (October 2007–August 2010), characterization of soil-gas at the stacked storage injection site at Cranfield Mississippi Southeast Carbon Partnership phase II (May 2008–Sept 2009), near-surface observatory for monitoring plugged and abandoned well sites at carbon sequestration sites, Southeast Carbon Partnership phase III (October 2009–current), high pressure-temperature experimental investigations of supercritical CO₂-brine-rock interactions, University of Texas Center for Frontiers of Subsurface Energy Security, a U.S. DOE Energy Frontier Research Center (2008–current)

Principal Investigator, IPAC-CO₂ Kerr Farm Assessment, Saskatchewan Canada.

- B. Staff Scientist, Smithsonian Institution (1988 - 1990).

National Museum of Natural History, Division of Mineral Sciences, Global Volcanism Program, Washington D.C. – Gathered, evaluated, and disseminated information about ongoing and urgent global volcanic activity to the worldwide volcanological community. Maintained working relationships with volcanologists world-wide. Produced technical documents such as the monthly Scientific Event Alert Network Bulletin (35,000 subscribers) as well as columns for Geotimes, EOS, and the Bulletin of Volcanology.

- C. Field Research Scientist, Smithsonian Institution/U.S.G.S Hawaiian Volcano Observatory (1988 - 1988).

Gathered field measurements for delineating the regional structure and gravitational stresses on Kilauea Volcano, Hawaii.

- D. AWU-DOE Graduate Fellow, The University of Texas at Arlington (1985 - 1985).

Conducted field research on the Cerros del Rio lava field, Jemez Mountains, New Mexico, funded by the Department of Energy in collaboration with scientists at Los Alamos National Laboratory. Work included delineating stratigraphy of volcanic deposits, defining phreato-magmatic eruption mechanisms, locating vents and collecting samples for geochemical, petrological and isotopic analysis.

Professional Societies

American Association of Petroleum Geologists
American Geophysical Union
Geological Society of America
International Association of Geochemistry
Sigma Gamma Epsilon, Earth Science Honors Society

Awards and Honorary Societies

Jackson School Equipment Award for High Pressure/Temperature Experimental Apparatus for Investigations of Supercritical CO₂-Water-Rock Interactions in Geologic Reservoirs, 2010

Career Development Publications Award, 2009

Jackson School Equipment Award for Integrated Near-Surface CO₂ Monitoring Observatory, 2009

Committee Responsibilities and Professional Activities

Guest Editor, Special issue: Geochemical aspects of geologic carbon storage, Applied Geochemistry, 2011 - 2012

Member, Steering Committee, 2011 IEAGHG 7th Monitoring Network Meeting, Potsdam, Germany June 7–9,, 2011

Session Chair, Updates and Permanent Installations: Current and Future Activities, 2011 IEAGHG 7th Monitoring Network Meeting, Potsdam, Germany June 7–9,, 2011

Member, Expert Panel on Site-Specific Monitoring, funded by EPA and CCP, Natchez, MS, May 5,, 2010

Member, Steering Committee, Workshop on Natural Releases of CO₂: Building Knowledge for CO₂ Storage Environmental Impact Assessments, Maria Laach, Germany, IEAGHG, 2010

Session Chair, Workshop: Natural Releases of CO₂: Building Knowledge for CO₂ Storage Environmental Impact Assessments: Monitoring Challenges in Light of Natural Systems, Maria Laach, Germany, IEAGHG November 2–4,, 2010

Member, Scientific Facilities Planning Committee (SFPC), Bureau of Economic Geology, 2009

Publications

Published Interviews

Romanak, Katherine, 2011, Geologists develop new method for measuring CO₂ levels in soil: GHG Reduction Technologies Monitor: v. 6, no. 26, p. 8–9. [Romanak heavily quoted]

Romanak, Katherine, and Hovorka, S. D., 2001, Need for DOE oil, gas R&D seen rising: inside energy/with Federal Lands, August 13, p. 1, 9–10 [feature summarizing Tinker's views on DOE's role in funding energy research; extensive quotations from Tinker].

Articles

Peer Reviewed

Fryar, A. E., Macko, S. A., Mullican, W. F., Romanak, Katherine, and Bennett, P. C., 2000, Nitrate reduction during ground-water recharge, Southern High Plains, Texas: *Journal of Contaminant Hydrology*, v. 40, 335–363.

Nicot, J. -P., Bennett, P. C., and Romanak, K. D., 1998, Gas phase dynamics of playa wetlands: *Journal of Environmental Engineering*, v. 124, 1038–1046.

Duncker, K. E., Wolff, J. A., Harmon, R. S., Leat, P. T., Dickin, A. P., and Thompson, R. N., 1991, Diverse mantle and crustal components in lavas of the NW Cerros del Rio volcanic field, Rio Grande rift, New Mexico: *Contributions to Mineralogy and Petrology*, v. 108, 331–345.

Non-Peer-Reviewed

Hovorka, S. D., Meckel, Timothy, Treviño, R. H., Lu, Jiemin, Nicot, J. -P., Choi, Jong-Won, Freeman, D., Cook, P. G., Daley, Tom, Ajo-Franklin, J., Freifeld, Barry, Doughty, C. A., Carrigan, C. R., La Brecque, D., Kharaka, Yousif, Thordsen, J. J., Phelps, Tommy, Yang, Changbing, Romanak, Katherine, Zhang, Tongwei, Holt, R. M., Lindler, J. S., and Butsch, R. J., 2011, Monitoring a large volume CO₂ injection: year two results from SECARB project at Denbury's Cranfield, Mississippi, USA, *in* *Energy Procedia*, v. 4, Proceedings of 10th International Conference on Greenhouse Gas Control Technologies GHGT10, September 19–23, Amsterdam, The Netherlands, p. 3478–3485.

Romanak, K. D., Smyth, R. C., Yang, Changbing, Hovorka, S. D., and Lu, J., 2010, Role of dedolomitization in the detection of anthropogenic CO₂ in freshwater aquifers, *in* Proceedings, 13th International Conference on Water-Rock Interaction, WRI-13, Guanajuato, Mexico, August 16–20, p. 887–890.

Romanak, Katherine, 2009, Volcanoes, *in* Laubach, S. E., and Tinker, S. W., eds., 2009, *Earth's art: celebrating the Centennial of the Bureau of Economic Geology, 1909–2009: The University of Texas at Austin*, Bureau of Economic Geology, p. 78–79.

Smyth, R. C., Hovorka, S. D., Lu, J., Romanak, K. D., Partin, J. W., Wong, C., and Yang, C., 2009, Assessing risk to fresh water resources from long term CO₂ injection—laboratory and field studies: *Energy Procedia*, v. 1, p. 1957–1964.

Fryar, A. E., Macko, S. A., Romanak, Katherine, Bennett, P. C., and Mullican, W. F., 1995, Evidence of limited denitrification beneath playas recharging the Ogallala Aquifer, *in* Proceedings, Water for Texas: Research Leads the Way Conference, January

Abstracts

Romanak, Katherine, Yang, Changbing, Hovorka, S. D., and Bennett, P. C., 2011, Method for distinguishing signal from noise in the near-surface using simple soil-gas measurements: lessons from natural and industrial analogues (abs.), *in* 10th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, May.

Romanak, Katherine, Smyth, R. C., Yang, Changbing, and Hovorka, S. D., 2011, Sensitivity of shallow groundwater systems to CO₂: lessons from the NETL SWP study at the SACROC oilfield (abs.), *in* 10th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, May.

Dixon, Tim, Romanak, Katherine, and Camps, Ameena, 2011, Natural CO₂ releases providing messages for stakeholders (abs.), *in* 10th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, May.

- Romanak, Katherine, Bennett, P. C., Yang, Changbing, and Hovorka, S. D., 2011, Soil-gas identification of vadose-zone carbon cycling: implications for near-surface modeling at CCS sites (abs), *in* Carbon and Capture Conference 6, Trondheim, Norway, June 14–16.
- Yang, Changbing, Romanak, Katherine, Lindler, J. S., Roecker, Frank, Hovorka, S. D., Treviño, R. H., Paine, J. G., Holt, B., Smith, L., Xia, Y., Smyth, R. C., and Rearick, Michael, 2011, Sensitivity of shallow groundwater systems to CO₂: case studies from the Cranfield and SACROC EOR fields, *in* Carbon and Capture Conference 6, Trondheim, Norway, June 14–16.
- Yang, C., Romanak, K., Hovorka, S. D., Reedy, R. C., Treviño, R. H., and Scanlon, B. R., 2010, Monitoring and modeling CO₂ dynamics in the vadose zone near an abandoned historic oil well: implications for detecting CO₂ leakage at geological CO₂ sequestration sites (abs.), *in* GSA Denver Annual Meeting, October 31–November 3, poster no. H33E-1202.
- Yang, C., Romanak, K. D., Hovorka, S. D., Linder, J., Smyth, R. C., Treviño, R. H., Paine, J. G., Holt, R. M., Smith, L. T., Xia, Y., and Lu, J., 2010, Geochemical characterization of shallow groundwater at the Cranfield aquifer and numerical simulation: can pH and carbonate parameters be used to detect potential CO₂ leakage at geological CO₂ sequestration sites? (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Romanak, K. D., Smyth, R. C., Yang, C., and Hovorka, S. D., 2010, Detection of anthropogenic CO₂ in dilute groundwater: field observations and geochemical modeling of the Dockum aquifer at the SACROC oilfield, West Texas, USA (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Zhang, T., Romanak, K. D., Gilbert, K., Yang, C., Bennett, P., and Hovorka, S. D., 2010, Evaluation of CO₂, He, C₁-C₅ gaseous hydrocarbons at an engineered CO₂ injection, Cranfield, Mississippi, (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Romanak, K. D., Yang, C., and Hovorka, S. D., 2010, Targeted soil-gas methodologies for monitoring an engineered plugged and abandoned well site, Cranfield Mississippi, (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Thordsen, J. J., Kharaka, Y. K., Ambats, G., Manning, M. A., Cole, D. R., Phelps, T. J., Horita, J., Lu, J., Romanak, K. D., and Cook, P. J., 2010, Chemical composition of brine and gas in the Tuscaloosa Formation: preliminary baseline and post CO₂ injection results from SECARB-III test at Cranfield, MS, (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Cook, P. J., Freifeld, B., Romanak, K. D., Lu, J., Yang, C., Phelps, T., Piffner, S., and Hovorka, S. D., 2010, U-tube geochemical sampling at SECARB Cranfield DAS project, (abs.), *in* National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, May 10–13, Pittsburgh.
- Yang, Changbing, Romanak, Katherine, Hovorka, S. D., Linder, J., Smyth, R. C., Treviño, R. H., Paine, J. G., Holt, B., Smith, L., Xia, Y., and Lu, Jiemin, 2010, Geochemical characterization of shallow groundwater at the Cranfield aquifer and numerical simulation: can pH and carbonated parameters be used to detect potential CO₂ leakage at geological CO₂ sequestration sites? (abs.) *In* Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, May 10–13, CD-ROM.
- Romanak, Katherine, Yang, Changbing, and Hovorka, S. D., 2010, Overview of major CCS projects in the U.S.: targeted soil-gas methodologies for monitoring an engineered plugged and abandoned well site, Cranfield, Mississippi (abs.) *In* Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, May 10–13, CD-ROM.
- Romanak, Katherine, Smyth, R. C., Yang, Changbing, and Hovorka, S. D., 2010, Detection of anthropogenic CO₂ in dilute groundwater: field observations and geochemical modeling of the Dockum aquifer at the SACROC oilfield, West Texas, USA (abs.) *In* Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, May 10–13, CD-ROM.

- Romanak, Katherine, Zhang, Tongwei, Yang, Changbing, Gilbert, K., Bennett, P. C., and Hovorka, S. D., 2010, Evaluation of CO₂, He, C₁-C₅ gaseous hydrocarbons at an engineered CO₂ injection, Cranfield, Mississippi (abs.) In Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, May 10–13, CD-ROM.
- Romanak, K. D., Smyth, R. C., Yang, C., and Hovorka, S. D., 2009, Modeling shallow groundwater geochemistry and carbon isotopes: test of methodology for CO₂ storage evaluation at an EOR site, West Texas, USA (abs.): *Eos*, v. 90, no. 22, Abstract V13C-03.
- Kosterev, A. A., Dong, L., Thomazy, D., Tittel, F. K., Pavlovsky, I., and Romanak, K., 2009, Portable spectroscopic carbon dioxide monitor for carbon sequestration applications (abs.), *in* 2009 Conference on Quantum Electronics and Laser Science, June, p. 1–2.
- Romanak, K. D., and Bennett, P. C., 2009, Soil-gas identification of environmental factors affecting CO₂ concentrations beneath a playa wetland: implications for soil-gas monitoring at carbon storage sites (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract No. H13I-03.
- Yang, Changbing, Romanak, Katherine, and Hovorka, S. D., 2009, CO₂ release experiment in the shallow subsurface at the Brackenridge Field Laboratory and numerical modeling (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract No. H21E-0895.
- Wu, S., Romanak, Katherine, and Yang, Changbing, 2009, Laser absorption spectroscopy methods for subsurface monitoring of CO₂ in water and air phases at sequestration sites (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract No. H21E-0900.
- Smyth, R. C., Romanak, Katherine, Yang, Changbing, and Hovorka, S. D., 2009, Shallow groundwater monitoring at the SACROC oilfield, Scurry County, TX: good news for geologic storage of CO₂ despite a complex hydrogeologic and geochemical setting (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract No. H13I-02.
- Romanak, Katherine, Smyth, R. C., Yang, Changbing, and Hovorka, S. D., 2009, Modeling shallow groundwater geochemistry and carbon isotopes: test of methodology for CO₂ storage evaluation at an EOR site, West Texas, USA (abs.): *Eos*, v. 90 no. 22, Abstract V13C-03.
- Smyth, R. C., Hovorka, S. D., Romanak, K. D., Partin, J. W., Meckel, Timothy, Wong, Corinne, Nicot, J. -P., and Holt, R. M., 2008, Assessing risk to fresh water resources from long term CO₂ injection—laboratory and field studies (abs.), *in* 9th International Conference on Greenhouse Gas Technologies, November 16–20, Washington, D.C.
- Romanak, K. D., and Smyth, R. C., 2008, Geochemical effects of CO₂-enhanced oil recovery on the shallow Dockum aquifer, west Texas (abs.), *in* 7th Annual Conference on Carbon Capture & Sequestration, May 5th–8th, 2008, Pittsburgh, Pennsylvania.
- Romanak, K. D., Bennett, P. C., and Nicot, J. -P., 1996, Vadose zone processes beneath a perched playa wetland, Texas High Plains (abs.): *Geological Society of America Abstracts with Programs, South-Central Section*, v. 28, no. 1, p. 61.
- Duncker, K. E., Wolff, J. A., Harmon, R. S., Leat, P. T., Thompson, R. N., and Dickin, A. P., 1989, Mantle and crustal components in mafic to intermediate lavas of the Cerros del Rio volcanic field, Rio Grande rift, New Mexico (abs.): *New Mexico Bureau of Mines Mineral Resources Bulletin*, v. 131, p.77.
- Duncker, K. E., Wolff, J. A., Harmon, R. S., Leat, P. T., Thompson, R. N., and Dickin, A. P., 1987, Stable isotope constraints on the petrogenesis of Cerros del Rio Magmas (abs): *EOS*, v. 68, p. 1532.

Contract Reports

- Romanak, Katherine, and Yang, Changbing, 2009, Field test of CO₂ sensor for carbon sequestration applications: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Applied Nanotech, Inc., 14 p.
- Yang, C., Romanak, K. D., Hovorka, S. D., Paine, J. G., Lu, J., Treviño, R. H., Holt, R. M., and Linder, J., 2009, Phase III Task 9.1.3b: Surface monitoring plan, SECARB Phase III (early) Project at

Cranfield: The University of Texas at Austin, Bureau of Economic Geology, technical report prepared for SECARB, 57 p.

Gustavson, T. C., Bebout, D. G., Bennett, P. C., Fish, E. B., Fryar, A. E., Hovorka, S. D., Hua, H.-P., Kirschenmann, Kyle, Laun, Scot, Minehardt, T. J., Mullican, W. F., III, Nicot, J. -P., Paine, J. G., Pezzolesi, T. P., Rainwater, Ken, Ramsey, Heyward, Reeduer, Alan, Romanak, K. D., Scanlon, B. R., Thompson, David, Xiang, Jiannan, and Zartman, R. E., 1995, Summary hydrogeologic assessment, U.S. Department of Energy Pantex Plant, Carson County, Texas: The University of Texas at Austin, Bureau of Economic Geology, milestone report prepared for U.S. Department of Energy, 98 p.

Lecturing

BEG Colloquia

Monitoring the behavior of CO₂ in shallow environments: evidence from one natural and two industrial carbon-storage analogue sites: presented at Bureau of Economic Geology Seminar, Austin, Texas, December 11, 2009.

Lectures and Addresses

Natural CO₂ releases providing messages for stakeholders: presented at 10th Annual Conference on Carbon Capture and Sequestration, Pittsburgh, Pennsylvania, May 2011.

Near-surface monitoring analogue studies: presented at Gulf Coast Carbon Center (GCCC) Annual Meeting of its Industrial Associates, Austin, Texas, January 2011.

Soil-gas identification of vadose-zone carbon cycling: implications for near-surface modeling at CCS sites: presented at Carbon and Capture Conference 6, Trondheim, Norway, June 14–16, 2011.

Sensitivity of shallow groundwater systems to CO₂: case studies from the Cranfield and SACROC EOR fields: presented at Carbon and Capture Conference 6, Trondheim, Norway, June 14–16, 2011.

U-tube sampling and near-surface monitoring demonstrations: presented at the International Energy Agency (IEA) Greenhouse Gas (GHG) R&D Programme Monitoring Network Meeting, Natchez, Mississippi, May 6–8, 2010.

Near-surface monitoring: presented at Gulf Coast Carbon Center (GCCC) Annual Meeting of its Industrial Associates, Austin, Texas, January 21, 2010.

Review of GCCC groundwater studies at British Petroleum (BP) America offices: recent results of groundwater studies at the SACROC oilfield in Texas and the Cranfield oilfield in Mississippi: presented to BP Houston and UK (via weblink) personnel, Houston, Texas, May 19, 2010.

Detection of anthropogenic CO₂ in dilute groundwater: field observations and geochemical modeling of the Dockum aquifer at the SACROC oilfield, West Texas, USA: presented at the National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, Pittsburgh, Pennsylvania, May 10–13, 2010.

Targeted soil-gas methodologies for monitoring an engineered plugged and abandoned well site, Cranfield Mississippi: presented at the National Energy and Technology Laboratory (NETL) Annual Carbon Capture and Storage (CCS) Meeting, Pittsburgh, Pennsylvania, May 10–13, 2010.

Pilot studies of CO₂ injection into geologic reservoirs as a prelude to large scale carbon sequestration: presented at the University of Geneva, Séminaire du Département de Géologie et Paléontologie, Geneva, Switzerland, November 8, 2010.

Monitoring CO₂ storage in deep geological formations: presented at the University of Bern, Bern, Switzerland, November 10, 2010.

Overview of major CCS projects in the U.S.: targeted soil-gas methodologies for monitoring an engineered plugged and abandoned well site, Cranfield, Mississippi: presented at Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, Pennsylvania, May 10–13, 2010.

Detection of anthropogenic CO₂ in dilute groundwater: field observations and geochemical modeling of the Dockum aquifer at the SACROC oilfield, West Texas, USA: presented at Ninth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, Pennsylvania, May 10–13, 2010.

The role of dedolomitization in the detection of anthropogenic CO₂ in freshwater aquifers: presented at the 13th meeting of the Water Rock Interaction Working Group of the International Association of Geochemistry and Cosmochemistry, Guanajuato, Mexico, August 13–17, 2010.

Soil-gas behavior and measurement in a carbon-reactive natural analogue; implications for near-surface monitoring: presented at the IEAGHG workshop: Natural Releases of CO₂: Building Knowledge for CO₂ Storage Environmental Impact Assessments, Maria Laach, Germany, November 2–4, 2010.

Modeling shallow groundwater geochemistry for CO₂ storage evaluation at an EOR site, West Texas: presented at Lawrence Berkeley National Laboratory, Berkeley, California, December 16, 2009.

Modeling shallow groundwater geochemistry and carbon isotopes: test of methodology for CO₂ storage evaluation at an EOR site, west Texas, USA: presented at KinderMorgan, Austin, Texas, May 22, 2009.

Near-surface monitoring at GS sites: recent advances by the Gulf Coast Carbon Center: presented at the Gulf Coast Carbon Center sponsors meeting, Houston, Texas, August 24, 2009.

Near-surface monitoring at GS sites: recent advances by the Gulf Coast Carbon Center: presented at the Gulf Coast Carbon Center sponsors meeting, Houston, Texas, August 24, 2009.

Soil-gas identification of factors affecting CO₂ concentrations beneath a playa wetland: implications for environmental monitoring at carbon storage sites: presented to the American Geophysical Union, San Francisco, California, December 9, 2009.

Assessing risk to fresh water resources from long term CO₂ injection—laboratory and field studies: presented at the GHGT-9 (Green House Gas Technology) Conference, Washington, D.C., November 16–20, 2008.

Geochemical investigation of CO₂ impact to shallow groundwater at SACROC, Permian Basin, Texas: presented at Southwest Regional Partnership on Carbon Sequestration, Phase II Annual Meeting, Albuquerque, New Mexico, October 23, 2008.

The knowns and unknowns of geologic sequestration: presented to San Antonio Association of Professional Landmen, San Antonio, Texas, October 13, 2008.

University Teaching

Monitoring CO₂ storage in geological formations: presented to Environmental Science and Engineering (CE 6221), Graduate Department of Civil and Environmental Engineering, The University of Texas at San Antonio, San Antonio, Texas, April 8, 2010.

Dockum groundwater study: example of geochemical modeling: presented at UTSA EES 5483 Environmental Hydrogeology graduate seminar, San Antonio, Texas, May 19, 2009.

Public Outreach

Energy, climate, and water in the 21st Century: presented at 2-week professional development workshop sponsored by STORE, GCCC's education and outreach program, for middle- and high-school teachers, in collaborations with TXESS and TWDB, Austin, Texas, March 7–8, 2011.

What to do with CO₂?: presented at GirlTalk: Energy, Climate and Water in the 21st Century, Ursuline Academy, Dallas, Texas, October 1 and 2, 2010.

Capture that gas: understanding carbon dioxide (CO₂): presented at UT Explore, Austin, Texas, March 7, 2009.

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Volcanoes! What makes them explode?: presented at Eanes Elementary Science Day, Austin, Texas, February 27, 2009.

