

# Ramon H. Trevino

## Professional Summary

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Business address: The University of Texas at Austin  
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### Professional Preparation

#### Academic Background

M.B.A. Business Management, University of Oklahoma, 1994

M.S. Geology, University of Texas at Arlington, 1988

B.S. Geology, Texas A&M University, Kingsville, 1983

#### Professional Appointments

Project Manager, Bureau of Economic Geology, The University of Texas at Austin (October 2007-Present)

Manage six multi-million-dollar studies on geologic sequestration of carbon dioxide. Oversee budgets, agreements with subcontractors, and development and scheduling of scientific field experiments. Interpret stratigraphy and sedimentology of target sequestration reservoirs. Present results at professional meetings and in scientific publications.

Research Scientist Associate III, Bureau of Economic Geology, The University of Texas at Austin (April 2000 - 2007). Interpret and correlate wireline logs; interpret 3-D seismic data; generate subsurface geologic maps using PC- and workstation-based software. Supervise and direct the work of research assistants. Research on sequestration of carbon dioxide emissions.

Prepare final drafts for contract report investigations. Oral presentations of investigation results to contractors.

Provide other team members (other geologists, petrophysicists, geophysicists, and engineers) with geologic support. Transfer of technology, which can include translating the concepts being discussed or used in a particular project into Spanish for Spanish-speaking colleagues (non-UT employees).

Prepare reports of investigations for clients. Publish results of investigations. Make oral presentations of results.

Investor Services Representative, Janus (November 1999 - April 2000). NASD Series 6 & Series 63 Licensed Representative. Provided information to investors about Janus mutual funds. Discussed with individual investors their financial needs and goals. Provided them with guidance as to options available to them in the Janus Family of Funds. Transacted trades (exchanges, purchases, redemptions) of clients' mutual fund shares in their Janus accounts. Acted as point person for investor concerns or problems regarding their accounts.

Research Scientist Associate III, Bureau of Economic Geology, The University of Texas at Austin (November 1995 - May 1999). Interpreted and correlated subsurface well logs, interpreted 3-D seismic data, generated subsurface geologic maps using PC- and workstation-based software. Directed the work of Research Assistants.

Prepared final drafts for contract report investigations. Oral presentations of investigation results to contractors.

Provided other team members (other geologists, petrophysicists, geophysicists, and engineers having geologic data) with geologic support. Transfer of technology, which could include translating the concepts being discussed or used in a particular project into Spanish for Spanish-speaking colleagues (non-UT employees).

Exploration Geologist, Mobil E&P U.S., Inc., Oklahoma City, OK (August 1988 - July 1992). Evaluated regional geologic potential for oil/gas generation. Evaluated specific areas for prospect status using geologic, geophysical, and geochemical tools. Monitored drilling of exploratory wells and evaluated their outcome. Presented individual and team research / conclusions (prospects) to local and corporate management. The evaluation / presentation material included geologic maps, cross sections, wireline logs, and seismic sections. Most of these materials were generated using various mainframe and PC software packages. I also acted as a mentor to student interns and a liaison for visiting foreign colleagues (because of my knowledge of foreign languages and cultures).

## Professional Registrations and Certificates

Texas Board of Professional Geoscientists #1490

## Theses

Facies and Depositional Environments of the Boquillas Formation, Upper Cretaceous of Southwest Texas: The University of Texas at Arlington, Master's thesis, 120 p., 1988

## Continuing Education Courses Taken

Decision Space Workshop: Statistical Analyses and Building an Earth Model: Haliburton/Landmark, Bureau of Economic Geology (Classroom), December 14-18, 2015

Petrel Intro Short Course: Schlumberger, Austin, Texas, April 2008

Introduction to GeoProbe: Landmark Graphics, Inc., Houston, Texas, July 2007

Core workshop: Deep-Water Reservoirs of California: from Core to Reservoir Characterization, Modeling and Production: PSAAPG/SEPM, Long Beach, California, April 2007

GESXplorer: Landmark Graphics, Houston, Texas, September 2005

Pennsylvanian adventures in Palo Pinto County: sedimentology and structure of terrestrial to shallow marine outcrop reservoir analogs, Pennsylvanian Mingus Formation, Mineral Wells, Texas: Dallas Geological Society, AAPG Annual Convention, Dallas, Texas, April 2004

SmartSection Training Course: A2D Technologies, Austin, Texas, February 2004

Using Core Data in Formation Evaluation: Core Lab Petroleum Services, Austin, Texas, March 2003

Fold-Thrust Belts: Petroleum Potential, Global Setting, Geodynamics: American Association of Petroleum Geologists, Austin, Texas, February 2003

Carbonate sequence stratigraphy and reservoir characterization: concepts and applications: Bureau of Economic Geology short course, The University of Texas at Austin, Drs. Scott Tinker and Charlie Kerans, instructors, Austin, Texas, May 2002

Sequence stratigraphy: GEO 380N: Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, January 2002

Terrigenous clastic depositional systems and sequences--applications to reservoir prediction, delineation, and characterization: American Association of Petroleum Geologists, Shreveport, Louisiana, October 2001

Seismic/sequence stratigraphy: its role in petroleum exploration and development: Bureau of Economic Geology, The University of Texas at Austin, Austin, Texas, May 2001

Learning EarthCube: Landmark, Houston, Texas, October 2000

## Areas of Expertise

### Areas of Expertise

Integrated reservoir characterization

Project Management, including large (multi-million dollar and multi-year) studies

Sequence stratigraphic interpretations (well logs, 3-D seismic)

Subsurface correlation and mapping (using workstation and PC) and subsurface structural interpretation (using 3-D seismic)

## Awards

### Awards and Honorary Societies

John C. Frye Memorial Award in Environmental Geology

The Geological Society of America

The Association of American State Geologists, 2018

Jackson School of Geosciences (UT Austin) Outstanding Research Award (to entire Gulf Coast Carbon Center staff), 2016

GCSSEPM Distinguished Service Award, 2012

Third Place, GCAGS Gordon I. Atwater Best Poster Award for Isochronous Correlation of Sandstone Facies within and between Growth-Faulted Frio Intraslope Sub-Basins: Common Correlation Pitfalls, 2004

## Service

### University Committees

Chair, Grants and Awards Committee (GAAC), Bureau of Economic Geology (BEG), Facilitate award nominations for BEG staff; award internal grants that support publications by BEG researchers, The University of Texas at Austin, September 1, 2014-2017

### External Committees Participation

Treasurer, GCSSEPM Executive Council, Gulf Coast Section-SEPM, 2005 - 2008

Delegate, AAPG House of Delegates, American Association of Petroleum Geologists, 2003 - 2006

Treasurer, Gulf Coast Association of Geological Societies, 2002

### Outreach Activities

Early-stage ridge--late-stage fault: presented to Corpus Christi SIPES, Corpus Christi, Texas, April 21, 2009.

Too much carbon in our atmosphere? Carbon sequestration--one option: presented to Coastab Bend Bays Foundation, Corpus Christi, Texas, February 9, 2009.

The Gulf Coast Carbon Center: enabling development of a carbon storage industry in the Gulf Coast: presented to Greater Houston Partnership, Houston, Texas, November 16, 2007.

### Proposal Review Panels Participation

Journal of Greenhouse Gases: Science and Technology (The CO<sub>2</sub> storage potential in the Qiongdongnan Basin, northwestern South China Sea (Article)), no. 13-0088, 37 p., 2013

SEG (Society of Exploration Geophysicists) (Abstracts), 2007, 7

Bureau of Economic Geology (Peer reviewer of BEG Report of Investigations "Play Analysis and Digital Portfolio of Major Oil Reservoirs in the Permian Basin"), 2004

## Teaching and Advising

### University Courses Taught

Stratigraphy, structure, and reservoir characteristics of the Block 889 Area, offshore Texas: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, November 30, 2001.

### Continuing Education Courses Taught

Global warming and fossil fuel consumption: what can be done?: presented to UT SAGE(TM) (Seminars for Adult Growth and Enrichment), University of Texas at Austin Thompson Conference Center, March 2, 2015.

### Field Trips Leadership

Finley, R. J., Dunlap, D. B., Trevino, R., A Brief Look at the Role of Gulf Coast Geology in Effective Carbon Dioxide Storage: Analogs and Insights, GoMCarb and SECARB Offshore Partnerships 1st Annual Meeting, Umphry State Park, Port Arthur, Tex., February 12, 2019.

Presenter, EarthLabs, Confronting the Challenges of Climate Carbon Capture and Geologic Storage: Global Research Centered in Texas: Science Education Resource Center at Carlton College: <http://serc.carleton.edu/earthlabs/index.html>, Austin, Texas, June 2013.

Leader, GeoForce SW 10th Grade Academy Field Trip in the Southwestern United States: Jackson School of Geosciences Diversity Program, Zion & Grand Canyon National Parks, Nevada, Utah, Arizona, June 2008.

Leader, GeoForce SW Young Geoscientist 11th Grade Field Trip: Jackson School of Geosciences Diversity Program, Austin, Texas, June 2008.

Leader, GeoForce 10th Grade Academy Field Trip in the Southwestern United States: Jackson School of Geosciences Diversity Program, , Nevada, Utah, Arizona, June 2007.

### Student Committee Participation

Thesis Committee Member, MS, Thesis, Edna Rodriguez Calzado, Estimating CO<sub>2</sub> Storage Capacity, Injectivity, and Storage Costs for Large-Scale CCS Deployment & Carbon Dioxide Removal Goals, The University of Texas at Austin, Austin, TX, 2023

Committee Member, MS Thesis Committee, Andrew J. Nicholson, Empirical analysis of fault seal capacity for CO<sub>2</sub> sequestration, lower Miocene, Texas Gulf Coast, The University of Texas at Austin, Austin, Texas, 2012

## Presentations

### Invited Presentations

A Proposed 4-Phase Workflow for Defining Permit-Ready Locations for Large-Volume CO<sub>2</sub> Injection and Storage: presented to American Geophysical Union, presented at AGU 2024 Conference, Washington, DC, December 11, 2024.

Carbon Capture & Sequestration (CCS): An Overview: presented to Clean Air Force, presented at Clean Air Force Air Quality Professionals Forum meeting, Austin, Tex., July 25, 2024.

Carbon Capture & Sequestration: What is it & What Does Mean for Geoscience? Geoscience Careers?: presented to Texas A&M University - Kingsville, presented at Monthly Geoscience Seminar, Kingsville, TX, November 16, 2023.

Carbon Capture & Sequestration: What Does Water Have to Do With It?: presented to Texas

Alliance of Groundwater Districts (TAGD), presented at TAGD Texas Groundwater Summit, San Antonio, TX, August 31, 2023.

Machine Learning-Guided CO<sub>2</sub> Reservoir Prediction in A Large 3D Survey with Sparse Wells: A GOM Example: presented at SEG/AAPG International Meetings; IMAGE 2022 · Research Workshop, 1 September 2022., Houston, Tex., September 1, 2022.

Partnership for Offshore Carbon Storage Resources and Technology Development in the Gulf of Mexico - "GoMCarb": presented to Gulf Basin Depositional Sythesis IA consortium, presented at 2021 Annual IA meeting, virtual (Microsoft Teams), January 14, 2021.

Carbon Capture and Storage (CCS) a Climate Change Mitigation Strategy That Requires Subsurface Geological Knowledge: presented to Texas A&M University, Kingsville, presented at Geoscience Technical Sesssion, virtual (Zoom), April 22, 2020.

Carbon sequestration: Can it work?: presented to University of Texas at Austin Energy Institute journalism workshop, Austin, Tex., September 27, 2017.

Carbon Capture & Sequestration: Implications for Groundwater: presented to Texas Commission on Environmental Quality (TCEQ), presented at Professional Geoscientists' Bi-monthly Brown-Bag Seminar (Professional Development Hours), February 20, 2024-Present.

## Presentations

Carbon Capture & Sequestration (CCS): Recent Regional Gulf of Mexico Developments: presented to American Shore and Beach Preservation Association, presented at Texas Coastal Symposium, Corpus Christi, TX, April 11, 2024.

A WORKFLOW FOR DOWN-SELECTING A CCS SITE: presented to Geological Society of America, South-Central Section, presented at 56th Annual Meeting - 2022, virtual; <https://doi.org/10.1130/abs/2022SC-373658>, March 14, 2022.

Progress in the Gulf of Mexico: presented at 5th University of Texas Conference on Carbon Capture and Storage (UTCCS-5), UT J. J. Pickle Research Campus, Austin, Tex., January 28, 2020.

Early Miocene High Island Delta System, Offshore Texas and Louisiana: presented at AAPG anual meeting, San Antonio, Tex., May 19-22, 2019.

Monitoring Stored CO<sub>2</sub> to Document Permanance: presented at Offshore Technology Conference 2019, Houston, Tex., May 9, 2019.

What Offshore CCS Will Look Like in the Gulf of Mexico--Perspectives from Texas: presented at Offshore Technology Conference 2019, Houston, Tex., May 9, 2019.

Carbon Capture and Sequestration (Storage) - CCS: A Climate Change Mitigation Strategy for the Near-Offshore Northwestern Gulf of Mexico: presented at American Shore and Beach Preservation Association, Texas Chapter, 2019 Symposium, Harte Research Institute, Texas A&M University, Corpus Christi, April 16, 2019.

"GOMCARB" Partnership Overview and Introduction: presented at GoMCarb and SECARB Offshore Partnerships 1st Annual Meeting, Lamar University, Beaumont, Tex., February 11, 2019.

High-Level Technical Evaluation of Sub-Basinal Storage: presented to The University of Texas at Austin, presented at 4th Conference on Carbon Capture and Storage, Austin, Tex., January 30, 2018.

Offshore CO<sub>2</sub> geo-sequestration (storage): presented to Ministry of Trade, Industry and Energy (MOTIE), Republic of Korea, presented at University of Texas at Austin Bureau of Economic Geology/Gulf Coast Carbon Center, August 18, 2017.

Field validation of MVA technology for offshore CCS: novel ultra-high-resolution 3D marine

seismic technology (P-Cable): presented to U.S. Department of Energy, National Energy Technology Lab, presented at Mastering the Subsurface Through Technology Innovation, Partnerships and Collaboration: Carbon Storage and Oil & Natural Gas Technologies Review Meeting, Pittsburgh, Pa., August 3, 2017.

"TXLA" northern Gulf of Mexico offshore storage assessment: presented to U.S. Department of Energy, National Energy Technology Lab, presented at Mastering the Subsurface Through Technology Innovation, Partnerships and Collaboration: Carbon Storage and Oil & Natural Gas Technologies Review Meeting, Pittsburgh, Pa., August 1, 2017.

Offshore CO<sub>2</sub> storage resource assessment of the northwest Gulf of Mexico Inner Continental Shelf, Upper Texas-Western Louisiana Coast: presented to AAPG, presented at AAPG Annual Convention and Exhibit, Houston, Tex., April 5, 2017.

Offshore CO<sub>2</sub> storage resource assessment of the northern Gulf of Mexico (Texas-Louisiana): presented to SECARB, presented at Southeast Regional Carbon Sequestration Partnership Stakeholders' Annual Meeting, Atlanta, Ga., March 9, 2017.

Offshore Texas Miocene CO<sub>2</sub> Storage Project: presented to Austin Geological Society, presented at Annual Poster Session, University of Texas at Austin, Bureau of Economic Geology, May 4, 2015.

Advancing global offshore CCS--proposing a CSLF task force: international initiative for CCS subsea (iCCSc): presented at Carbon Sequestration Leadership Forum, Washington, DC, November 6, 2013.

An Atlas of CO<sub>2</sub> Storage Potential in the Nearshore waters of the Texas Coast--American Recovery and Reinvestment Act--"Gulf of Mexico Miocene CO<sub>2</sub> Site Characterization Mega-Transect" Study: presented to Department of Energy (DOE) National Energy Technology Lab (NETL) and PI's of DOE-supported studies, Pittsburgh, Pennsylvania, August 21, 2013.

Gulf of Mexico Miocene CO<sub>2</sub> Site Characterization Mega Transect--Annual Review: presented to Department of Energy (DOE) National Energy Technology Lab (NETL) and PI's of DOE-supported studies, Pittsburgh, Pennsylvania, August 20, 2013.

First seismic acquisition survey cruise using the newly acquired "P-cable" system--July 15-31, 2012--offshore San Luis Pass, Texas: presented to Department of Energy (DOE) National Energy Technology Lab (NETL) and DOE-supported studies' PI's, Pittsburgh, Pennsylvania, August 21, 2012.

SECARB test at Cranfield, MS, USA--an update: presented to Technical Committee of the Carbon Sequestration Leadership Forum, Warsaw, Poland, October 7, 2010.

Update on results of SECARB test of monitoring large-volume injection at Cranfield: presented to Project Interaction and Review Team (Carbon Sequestration Leadership Forum), Warsaw, Poland, October 6, 2010.

Can carbon capture and geologic storage mitigate greenhouse gases?: presented to the Biennial Alberta-Texas Global Climate Forum, Austin, Texas, April 7, 2010.

Offshore geosequestration potential in the Gulf of Mexico: presented to the Geological Society, London, UK, March 25, 2010.

Gulf of Mexico mapping--NATCARB Atlas: presented to the NACAP (North America Carbon Atlas Partnership), Cuernavaca, Mexico, March 9, 2010.

Gulf of Mexico mapping--NATCARB Atlas: presented to the NACAP (North America Carbon Atlas Partnership), Cuernavaca, Mexico, March 9, 2010.

Southeast Partnership early test update Cranfield field, MS: presented at the Eighth Annual Conference on Carbon Capture & Sequestration, Pittsburgh, Pennsylvania, May 6, 2009.

Southeast Partnership early test update, Cranfield field, MS: presented at Eighth Annual

Conference on Carbon Capture and Sequestration, Pittsburgh, Pennsylvania, May 6, 2009.

Basics of geology and carbon sequestration: presented to Boy Scout Troop 385, Venado District of the South Texas Council, Boy Scouts of America, Kingsville, Texas, April 20, 2009.

Status update: SECARB III Cranfield, MS: presented at Southern States Energy Board Stakeholders' Meeting, Atlanta, Georgia, March 3, 2009.

Geologic storage carbon dioxide (CO<sub>2</sub>): presented to prospective JSG students, Austin, Texas, February 24, 2009.

Geologic storage (almacenamiento geológico) of carbon dioxide (CO<sub>2</sub>): presented at the JSG Latin American Forum, Austin, Texas, December 9, 2008.

Comparing carbon sequestration in an oil reservoir to sequestration in a brine formation- field study: presented at the GHGT-9 (Green House Gas Technology) Conference, Washington, D.C., November 16-20, 2008.

Sequence stratigraphy of the South Texas Oligocene: understanding the relationship between shale tectonism and lowstand deposition: presented at the North American Prospect Expo E&P Forum, Houston, Texas, August 22, 2007.

Tools of a petroleum geologist: presented to Austin Area Science Fair Earth Science Experiment students and parents at STARR work area, Austin, Texas, March 6, 2006.

Sequence stratigraphy of the South Texas Oligocene: the relationship between shale tectonism and lowstand deposition: presented to Austin SIPES, Austin, Texas, April 20, 2005.

Sequence stratigraphy of the South Texas Oligocene: understanding the relationship between shale tectonism and lowstand deposition: presented to Corpus Christi Geological Society, Corpus Christi, Texas, December 15, 2004.

Understanding growth-faulted, intraslope subbasins and associated reservoir targets by applying sequence stratigraphic principles: examples from the South Texas Oligocene Frio Formation: presented at the Houston Geological Society North American Explorations dinner meeting, Houston, Texas, September 27, 2004.

Mustang Island Block 889 overview: presented at PTTC-STARR Forum for State Waters Operators, at BEG HRC, Houston, Texas, June 15, 2004.

Annual Report of the Treasurer: presented at Gulf Coast Association of Geological Societies and Gulf Coast Section of SEPM 52nd Annual Convention, Austin, Texas, October 2002.

## Activities of a Professional Nature

### Professional Societies

American Association of Petroleum Geologists

Austin Geological Society

Geological Society of America

SEPM (Society for Sedimentary Geology)

SEPM, Gulf Coast Section

Society of Exploration Geophysicists

### Program and Project Management

Primary author of DOE quarterly reports and final report for the Gulf of Mexico Miocene CO<sub>2</sub> Mega Transect study (2009-2014). All detailed reports were submitted on time. The final report, which comprised a thorough summary and review of the 4.75 year duration of the study (583 pages), was a team effort and required a significant amount of project management to complete and submit.

I also coordinated the repair and maintenance of several P-Cable system items in preparation for three novel P-Cable surveys (e.g., repair of streamers, digitizers; general maintenance on four winches (belts, gears, fluids, etc.) plus specialized modifications to one winch; repair of a damaged signal cable and two streamers, purchasing four spare tri-point GPS junction boxes and a GI gun repair kit, etc.).

The project ended on 9/30/14, and the comprehensive final report was submitted on December 18, 2014---successful, on time, and under budget.

Project Manager and co-PI for Phases 2 and 3 of the Dept. of Energy (DOE) National Energy Technology Lab Southeast Regional Carbon Sequestration Partnership (SECARB) Early Test (2007 - 2019). Duties include planning and implementing budget (over \$36,000,000) for DOE budget periods; managing budget and expenditures, including salaries and fringe for UT staff; negotiating, managing, and implementing contracts for seven subcontractors: Sandia Technologies, LLC, Denbury Onshore, LLC, Mississippi State University, University of Mississippi, Pinnacle Technologies (a Halliburton Co.), Anchor-QEA. In addition, I was a primary point of contact for our Prime, Southern States Energy Board, Lawrence Berkeley Nat. Lab., Lawrence Livermore Nat. Lab., Oak Ridge Nat. Lab., and USGS.

Project Manager and co-PI of the Seismic Imaging Service Center (SISC), established within the BEG as a vehicle to utilize, maintain, and (as needed) upgrade the high- resolution 3D seismic (P-Cable) acquisition system purchased with funds from the Gulf of Mexico Miocene CO2 Site Characterization Mega Transect study (2009-2014) (Dept. of Energy Cooperative Agreement No. DE-FE0001941).

## Activities of a Professional Nature

Organizing committee member - AAPG CCUS 2022 (June 21, 2021-March 29, 2022)

Session co-chair - AAPG CCUS Conference 2022; Sessions 1 & 2 - Subsurface Storage Parts I & II (March 29, 2022-Present)

"Aquifer in a Tank" experiment presented to 5th graders from St. Andrew's School

Judge, 2003 Science Fair, Bryker Woods Elementary

Judge, 2004 Science Fair, Bryker Woods Elementary

Judge, Oral SEPM Session (Processes and Modeling of Deep-Water Flows II), American Association of Petroleum Geologists Annual Convention, Long Beach, April 2007

Judge, Oral Session, Role of Climate in a Sequence Stratigraphic Framework, 2004 American Association of Petroleum Geologists Annual Convention

Judge, Poster Session, 2003 Gulf Coast Association of Geological Societies Convention

Judge, Spicewood Elementary School Science Fair, February 2008

Judge: Spicewood Elementary School Science Fair, February 2009

Judge: Ortega Elementary School Science Fair

Presentation on rocks to Kindergarten and 1st Graders at U.T. Child and Family Lab, Austin, June 2006

Presentation on rocks to kindergarten and 1st graders, U.T. Child and Family Lab, June 2003

Presenter for Earth Science Week middle school students, October 2006

Presenter, Earth Science Week Middle Schoolers, October 2005

Tour guide for Earth Science Week middle schoolers

Tour guide for group of Kealing Jr. High 8th graders, 2003 Earth Science Week career fair

## Funding

### Research Support

Co-Principal Investigator / Project Manager: Validation of MVA Tools for Offshore CCS: Novel Ultra-High-Resolution 3D Marine Seismic Technology Integrated with Coring and Geochemistry, U.S. Department of Energy, National Energy Technology Laboratory (October 1, 2016-September 30, 2019; \$2,498,657).

Co-Principal Investigator: University of Texas at Austin, Bureau of Economic Geology, Seismic Imaging Service Center (September 1, 2016-August 31, 2018).

Co-Principal Investigator / Project Manager: DE-FE0026083: Offshore CO<sub>2</sub> Storage Resource Assessment of the Northern Gulf of Mexico (Texas-Louisiana), U.S. Department of Energy, National Energy Technology Laboratory (September 1, 2015-August 31, 2018; \$2,482,219).

Co-Principal Investigator: Offshore CO<sub>2</sub> Storage Resource Assessment of the Northern Gulf of Mexico (Texas-Louisiana), U.S. Department of Energy, National Energy Technology Laboratory (September 1, 2015-August 31, 2018; \$3,285,885).

Co-Principal Investigator: Southeast Regional Carbon Sequestration Partnership: Phase III, U.S. Department of Energy, National Energy Technology Laboratory (October 1, 2007-September 30, 2017; \$31,447,977).

Co-Principal Investigator: GLO: Mega Transect Carbon Repository, Texas General Land Office (January 25, 2010-September 30, 2015; \$1,200,000).

Co-Principal Investigator: Gulf of Mexico Miocene CO<sub>2</sub> Site Characterization Mega Transect II, U.S. Department of Energy, National Energy Technology Laboratory (December 7, 2009-September 30, 2014; \$4,670,775).

Co-Principal Investigator: Gulf of Mexico Miocene CO<sub>2</sub> Site Characterization Mega Transect, U.S. Department of Energy, National Energy Technology Laboratory (December 7, 2009-September 30, 2014; \$4,593,121).

Co-Principal Investigator: Southeast Regional Carbon Sequestration Partnership: Phase II, U.S. Department of Energy, National Energy Technology Laboratory (October 1, 2005-September 30, 2010; \$4,634,563).

## Publications

### Peer Reviewed Journal Articles

Treviño, R. H., Hovorka, S. D., Dunlap, D. B., Larson, R. C., Hentz, T. F., Hosseini, S. A., Bhattacharya, S., and DeAngelo, M. V., 2024, A phased workflow to define permit-ready locations for large volume CO<sub>2</sub> injection and storage: *Greenhouse Gases Science and Technology*, v. 14, no. 1, p. 95-110, <http://doi.org/10.1002/ghg.2253>.

Meckel, T. A., Treviño, R. H., Hovorka, S. D., and Bump, A. P., 2023, Mapping existing wellbore locations to compare technical risks between onshore and offshore CCS activities in Texas: *Greenhouse Gases: Science and Technology*, v. 13, no. 3, p. 493-504, <http://doi.org/10.1002/ghg.2220>.

Zeng, H., He, Y., Olariu, M., and Treviño, R., 2023, Machine learning-based inversion for acoustic impedance with large synthetic training data: workflow and data characterization: *Geophysics*, v. 88, no. 2, p. R193-R207, <http://doi.org/10.1190/GEO2021-0726.1>.

Meckel, T. A., Bump, A. P., Hovorka, S. D., and Treviño, R. H., 2021, Carbon capture, utilization, and storage hub development on the Gulf Coast: *Greenhouse Gases: Science and Technology*, v. 11, no. 4, p. 619-632, <http://doi.org/10.1002/ghg.2082>.

DeAngelo, M. V., Fifariz, R., Meckel, T., and Treviño, R. H., 2019, A seismic-based CO<sub>2</sub>-sequestration regional assessment of the Miocene section, northern Gulf of Mexico, Texas

and Louisiana: *International Journal of Greenhouse Gas Control*, v. 81, p. 29-37, <http://doi.org/10.1016/j.ijggc.2018.12.009>.

Goudarzi, A., Meckel, T., Hosseini, S. A., and Treviño, R. H., 2019, Statistical analysis of historic hydrocarbon production data from Gulf of Mexico oil and gas fields and application to dynamic capacity assessment in CO<sub>2</sub> storage: *International Journal of Greenhouse Gas Control*, v. 80, p. 96-102, <http://doi.org/10.1016/j.ijggc.2018.11.014>.

Meckel, T., Feng, Y. E., Treviño, R. H., and Sava, D., 2019, High-resolution 3D marine seismic acquisition in the overburden at the Tomakomai CO<sub>2</sub> storage project, offshore Hokkaido, Japan: *International Journal of Greenhouse Gas Control*, v. 88, p. 124-133, <http://doi.org/10.1016/j.ijggc.2019.05.034>.

Olariu, M. I., DeAngelo, M., Dunlap, D., and Treviño, R. H., 2019, High frequency (4th order) sequence stratigraphy of Early Miocene deltaic shorelines, offshore Texas and Louisiana: *Marine and Petroleum Geology*, v. 110, p. 575-586, <http://doi.org/10.1016/j.marpetgeo.2019.07.040>.

Klokov, A., Meckel, T., and Treviño, R. H., 2018, Confining system integrity assessment by detection of natural gas migration using seismic diffractions: *International Journal of Greenhouse Gas Control*, v. 75, p. 32-40, <http://doi.org/10.1016/j.ijggc.2018.05.001>.

Klokov, A., Treviño, R. H., and Meckel, T., 2017, Diffraction imaging for seal evaluation using ultra high resolution 3D seismic data: *Marine and Petroleum Geology*, v. 82, p. 85-96, <http://doi.org/10.1016/j.marpetgeo.2017.02.002>.

Yang, C., Jamison, K., Xue, L., Dai, Z., Hovorka, S. D., Fredin, L., and Treviño, R. H., 2017, Quantitative assessment of soil CO<sub>2</sub> concentration and stable carbon isotope for leakage detection at geological carbon sequestration sites: *Greenhouse Gases: Science and Technology*, v. 7, no. 4, p. 680-691, <http://doi.org/10.1002/ghg.1679>.

Yang, C., Romanak, K. D., Reedy, R. C., Hovorka, S. D., and Treviño, R. H., 2017, Soil gas dynamics monitoring at a CO<sub>2</sub>-EOR site for leakage detection: *Geomechanics and Geophysics for Geo-Energy and Geo-Resources*, v. 3, p. 351-364, <http://doi.org/10.1007/s40948-017-0053-7>.

Yang, C., Hovorka, S. D., Treviño, R. H., and Delgado-Alonso, J., 2015, Integrated framework for assessing impacts of CO<sub>2</sub> leakage on groundwater quality and monitoring-network efficiency: case study at a CO<sub>2</sub> enhanced oil recovery site: *Environmental Science & Technology*, v. 49, p. 8887-8898, <http://doi.org/10.1021/acs.est.5b01574>.

Yang, C., Treviño, R. H., Hovorka, S. D., and Delgado-Alonso, J., 2015, Semi-analytical approach to reactive transport of CO<sub>2</sub> leakage into aquifers at carbon sequestration sites: *Greenhouse Gases Science and Technology*, v. 5, no. 6, p. 786-801, <http://doi.org/10.1002/ghg.1527>.

Wallace, K. J., Meckel, T., Carr, D. L., Treviño, R. H., and Yang, C., 2014, Regional CO<sub>2</sub> sequestration capacity assessment for the coastal and offshore Texas Miocene interval: *Greenhouse Gases Science and Technology*, v. 4, p. 53-65, <http://doi.org/10.1002/ghg.1380>.

Yang, C., Dai, Z., Romanak, K. D., Hovorka, S. D., and Treviño, R. H., 2014, Inverse modeling of water-rock-CO<sub>2</sub> batch experiments: potential impacts on groundwater resources at carbon sequestration sites: *Environmental Science and Technology*, v. 48, no. 5, p. 2798-2806, doi: 10.1021/es4041368

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 pulslike CO<sub>2</sub>-release test: *Environmental Science and Technology*, v. 48, no. 23, p. 14031-14040, <http://doi.org/10.1021/es5044003>.

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