

Vanessa Nuñez-López

Professional Summary

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Professional Preparation

Academic Background

M.A. Energy and Mineral Resources, The University of Texas at Austin, December 2005

M.S. Petroleum Engineering, The University of Texas at Austin, December 2001

B.S. with Honors Petroleum Engineering, Universidad Central de Venezuela, July 1999

Professional Appointments

Present Position: Research Associate, Bureau of Economic Geology, The University of Texas at Austin (2010 - Present).

Senior Reservoir Engineer, Chevron Energy Technology Company, Chevron Corporation (August 2007 - November 2010). Project Manager, polymer flooding appraisal and feasibility study; technical expert in CO₂ sequestration regional management assessments; Project Manager, CO₂-EOR/storage co-optimization; Chevron Representative, CCS technology research programs (joint industry projects): Gulf Coast Carbon Center, Bureau of Economic Geology, UT; Center for Petroleum and Geosystems Engineering, UT; IEA GHG Weyburn-Midale Project (Technical Steering Committee Member and Industry Representative in the Leading Sponsors Executive Committee); support for Chevron CCS technology plan/organizational capability; member of Chevron's Carbon Dioxide Center of Excellence.

Lead Reservoir Engineer, Chevron Energy Technology Company, Chevron Corporation (October 2006 - July 2007). Technical Lead: Chevron Carbon Capture and Sequestration (CCS) regional management assessments; leading role in CCS technology research programs (joint industry projects): Gulf Coast Carbon Center, Bureau of Economic Geology, UT; Center for Petroleum and Geosystems Engineering, UT; IEA GHG Weyburn-Midale CO₂ monitoring and storage project (Technical Steering Committee Member and Chevron Representative in the Leading Sponsors Executive Committee); support for Chevron CCS technology plan/organizational capability.

Research Scientist Associate, Bureau of Economic Geology, The University of Texas at Austin (January 2006 - September 2006). Gulf Coast Carbon Center staff: reservoir engineering support for the Southwest Regional Partnership for Carbon Sequestration and the Southeast Regional Carbon Sequestration Partnership; FutureGen Texas team member: reservoir characterization of proposed FutureGen sites and estimation of CO₂ EOR potential/sequestration, recommendations to the FutureGen advisory board.

Graduate Research Assistant, Bureau of Economic Geology, The University of Texas at Austin (March 2003 - January 2006). Development of screening criteria for miscible CO₂ flooding; evaluation of CO₂ EOR/Sequestration opportunities with interest in the Gulf Coast; reservoir characterization of sandstone and carbonate oil and gas reservoirs for various projects; risk assessment of potential oil and gas resources in play based basin studies, including P10, P50,

and P90 oil and gas volumes.

Teaching Assistant, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin (Summer 2002 - Spring 2003). Dr. Larry W. Lake teaching assistant: Geochemical Modeling and Chromatographic Transport, Graduate Course, Summer 2002; Elements of Reservoir Engineering, Undergraduate Course, Fall 2003; Transport Processes in petroleum Engineering, Graduate Course, Fall 2002; Introduction to Geostatistics, Undergraduate Course, Spring 2003.

Assistant Professor, Universidad Central de Venezuela (July 1999 - December 1999). Production Engineering I--productivity of oil and gas wells, well flow characteristics, well stimulation, and workover methods; Production Engineering II--surface facilities; Reservoir Engineering Laboratory.

Research Assistant, Technical Center, MI Drilling Fluids (January 1998 - July 1999). Design and testing of environmentally safe water-based lignite/lignosulfate drilling fluids, through a triple inhibition approach--shale hydration inhibition, shale dispersion inhibition, and accretion inhibition; rheology measurement and analysis of polymeric drilling fluids at elevated pressure and temperature.

Teaching Assistant, Universidad Central de Venezuela (January 1995 - July 1999). Reservoir Engineering I; Reservoir Laboratory; Drilling Fluids Laboratory; Production Engineering I.

Intern, Dowell-Schlumberger, Hydraulic Fracturing (July 1997 - September 1997).

Theses

Carbon dioxide enhanced oil recovery potential and sequestration capacity in the Gulf Coast: a CO₂

sink analysis near Texas City, The University of Texas at Austin, 2005, 105 p.

Design of environmentally safe lignosulphonate drilling fluids: rheological evaluation and range of application

Continuing Education Courses Taken

Project Management: Project Development and Execution Process (CPDEP): Chevron Energy Technology Company's Reservoir Simulation Consulting Team, Houston, Tex., July 1-5, 2009

Interpretation and Earth Modeling Workflows in Petrel: Chevron Energy Technology Company's Modeling Consulting Group, Houston, Tex., October 20-24, 2008

Applied Reservoir Simulation: Chevron Energy Technology Company's Reservoir Simulation Consulting Team, Houston, Tex., May 19-23, 2008

Directional Drilling: PDVSA-CIED, Venezuela, 1999

Electrical Submersible Pumping: PDVSA-CIED, Venezuela, 1999

Gas Lift: PDVSA-CIED, Venezuela, 1999

Hydraulic Fracturing: PDVSA-CIED, Venezuela, 1999

Natural Gas Treatment: PDVSA-CIED, Venezuela, 1999

Production Geology: PDVSA-CIED, Venezuela, 1999

Sucker Rod Pumping: PDVSA-CIED, Venezuela, 1999

Water-Based Drilling Fluids: PDVSA-CIED, Venezuela, 1999

Areas of Expertise

Areas of Expertise

CO₂ EOR/sequestration

Production forecasting
Project management
Reservoir characterization
Resource evaluation

Awards

Awards and Honorary Societies

Tinker Family BEG Publication Award, 2020
O-1 Visa for Aliens with Extraordinary Abilities in the Sciences, granted by U.S. Department of State, 2007
Invited and fully funded participant in the Research Experience in Carbon Sequestration (RECS) Program, Santa Fe, New Mexico, 2005
Second place, Technical Work Latin America SPE Contest, Puerto La Cruz, Venezuela, 1999
Venezuela Government Scholarship for Graduate Studies Abroad, PDVSA-CIED, 1999

Service

University Committees

Panelist Speaker: Clean, Green or In-Between: Competing Visions of a Decarbonized Economy, Vital technologies for the energy transition; opportunities and challenges associated with rapidly scaling up new emerging technologies such as battery storage, small modular reactors and carbon capture and storage, Etter-Harbin Alumni Center, The University of Texas at Austin, February 5, 2019

External Committees Participation

Member, PhD dissertation evaluation committee (expected 2020), Erik Medina, Geosciences Center, Universidad Nacional Autonoma de Mexico (UNAM), Tampico-Misantla Basin evaluation for CO2 sequestration, November 30, 2018-Present
Committee Member, SPE IOR Technical Program Committee, Improved Oil Recovery, Tulsa, Okla., March 1, 2016-Present
Committee Member, AAPG ACE 2019 Technical Program Committee, Energy Sustainability and the Environment, San Antonio, Tex., June 5, 2018-May 22, 2019
Internship Supervisor, Tania Huerta, Master student in CCUS Program at Universidad Nacional Autonoma de Mexico (UNAM), Internship performed at Gulf Coast Carbon Center (Bureau of Economic Geology, UT Austin), August 20-December 20, 2018
Session Co-Chair, Technical Session 8B: Strategies for Monitoring Optimization, 14th International Conference on Greenhouse Gas Control Technologies (GHGT-14), Melbourne, Australia, October 24, 2018
Session Chair, CO2-EOR II, 2018 SPE Improved Oil Recovery Conference, Tulsa, Okla., April 17-20, 2018
Panelist Speaker, First Annual CO2 Capture, Utilization and Storage (CCUS) Technical Session Dinner. Moderator: George Koperna, VP, Advanced Resources International. Other Panelists: Concetto Fischetti, Engineering Director Oil and Gas Climate Initiative; Charles D. McConnell, Executive Director Rice University Energy & Environment Initiative, SPE Annual Technical Conference and Exhibition (ATCE) 2017, CCUS role to sustain carbon-based fuel demand during the energy transition, San Antonio, Tex., October 9, 2017
Panelist, 1C-CO2 Enhanced Oil Recovery: Show Me the Money panel discussion, COAL-GEN, Economic offtake of CO2 from power generation facilities, Louisville, Ky., August 16, 2012

Published Interviews

Bubenik, T., and Nuñez-López, V., 2019, "Carbon neutral oil" is promising, but far from guaranteed: NPR - Houston Public Media, <https://www.houstonpublicmedia.org/articles/news/in-depth/2019/06/20/337158/carbon-neutral-oil-is-promising-but-far-from-guaranteed/>. Interview recorded at KUT Austin studios and aired on NPR in several cities, including Austin and Houston.

Teaching and Advising

University Courses Taught

Potential of CO₂ enhanced oil recovery for near-term decarbonization: presented to Hutton Club Seminar, presented at School of Geosciences, University of Edinburgh, Edinburgh, Scotland, October 4, 2019.

The Carbon Balance Evolution of CO₂-EOR: An Opportunity for Net Carbon Negative Oil: presented at Bureau of Economic Geology Spring Seminar Series, The University of Texas at Austin, February 23, 2018.

Carbon Balance of CO₂-EOR for Net Carbon Negative Oil Classification: presented at Bureau of Economic Geology Spring Seminar Series, The University of Texas at Austin, April 1, 2016.

Gulf Coast Carbon Center Experience with CCS Projects: presented to graduate students and researchers, presented at 2nd CSLF Course Advanced Topics in Carbon Capture and Storage, Pontificia Universidade Catolica do Rio Grande do Sul, Porto Alegre, Brazil, April 7-10, 2014.

CO₂ Monitoring in EOR Projects: presented to graduate students and researchers, presented at 1st Course Advanced Topics in Carbon Capture and Storage, Pontificia Universidade Catolica do Rio Grande do Sul, Porto Alegre, Brazil, April 1-4, 2013.

Fundamentals of CO₂ Enhanced Oil Recovery: presented to graduate students and researchers, presented at 1st Course Advanced Topics in Carbon Capture and Storage, Pontificia Universidade Catolica do Rio Grande do Sul, Porto Alegre, Brazil, April 1-4, 2013.

Risk Assessment for Carbon Capture and Storage: presented to graduate students and researchers, presented at 1st Course Advanced Topics in Carbon Capture and Storage, Pontificia Universidade Catolica do Rio Grande do Sul, Porto Alegre, Brazil, April 1-4, 2013.

Carbon storage monitoring in a commercial EOR setting: an MVA plan for Hastings field: presented at BEG fall seminar series, Austin, Texas, October 28, 2011.

Production Engineering I: presented to undergraduate class, Fall 1999. Topics covered: productivity of oil and gas wells, well flow behavior, well stimulation, workover methods, Department of Petroleum Engineering, Universidad Central de Venezuela.

Production Engineering II: presented to undergraduate class, Fall 1999. Topics covered: surface facilities, oil and gas separation processes, flow station design, Department of Petroleum Engineering, Universidad Central de Venezuela.

Continuing Education Courses Taught

Carbon Storage in Saline Aquifers and Depleted Oil Fields: presented to CFE, UNAM, IMP, Conagua, SENER, Mexico City, April 24-28, 2017.

Monitoring, Measurement, and Verification (MMV) applied to CO₂ enhanced oil recovery projects: presented to PEMEX, SENER, Villahermosa, Mexico, October 17-21, 2016.

Presentations

Invited Presentations

Monitoring injected carbon for geologic permanence using an Assessment of Low Probability Material Impact (ALPMI): presented to CO₂ Storage Group, presented at Imperial College

London, London, UK, October 21, 2019.

CO2 Enhanced Oil Recovery: An Opportunity for Producing Reduced Carbon Oil: presented to Austin Women in Oil and Gas (AWOG), presented at Austin, Tex., Luncheon Talk at Vaqueros Cafe & Cantina, April 15, 2019.

Carbon Life Cycle Analysis of CO2-EOR for Net Carbon Negative Oil (NCNO) Classification--Final Presentation: presented to Department of Energy (DOE), via Webex, January 29, 2019.

Advances in CO2 Storage and EOR: presented at 5th North American Energy Ministers Trilateral Meeting, Mexico City, Mexico, September 19-21, 2018.

Carbon LCA of CO2-EOR for NCNO: presented at 5th North American Energy Ministers Trilateral Meeting, Mexico City, Mexico, September 19-21, 2018.

CO2-EOR: An Alternative to Greenhouse Gas Reduction: presented at DOE Summit on Realizing the Circular Carbon Economy, Golden, Colo., July 24-25, 2018.

Carbon Life Cycle Analysis of CO2-EOR for Net Carbon Negative Oil (NCNO) Classification: presented to DOE-NETL, presented at NETL Internal Meeting, via Webex, March 29, 2018.

The Carbon Balance Evolution of CO2-EOR: An Opportunity for Net Carbon Negative Oil: presented to Session 6 Enhanced Oil Recovery, presented at 10th Carbon Dioxide Utilization Summit, Tampa, Fla., February 29-March 2, 2018.

Carbon LCA of CO2-EOR for NCNO: presented at Workshop on Decarbonizing Oil: The Role of CO2 Enhanced Oil Recovery (CO2-EOR), Paris, France, January 31-February 2, 2018.

Carbon Life Cycle Analysis of CO2- EOR for Net Carbon Negative Oil (NCNO) Classification: presented at Bilateral U.S.-Norway Collaboration on CCS/CCUS, Norway. Presented via Skype, August 30-31, 2017.

GCCC Overview: Carbon Capture Utilization and Storage: presented to Mexican visitors from SENER (Research Applications for Mexico Upstream), Bureau of Economic Geology, The University of Texas at Austin, August 23, 2017.

Carbon Life Cycle Analysis of CO2- EOR for Net Carbon Negative Oil (NCNO) Classification: presented at DOE-NETL Project Review Meeting, Pittsburgh, Pa., August 3, 2017.

Bureau of Economic Geology Studies on Louisiana CO2-EOR Potential and Oil Reservoir Screening: presented to SSEB, presented at Industrial CCUS Forum, New Orleans, La., November 2-3, 2016.

Carbon Life Cycle Analysis of CO2- EOR for Net Carbon Negative Oil (NCNO) Classification: presented at DOE-NETL Project Review Meeting, Pittsburgh, Pa., August 15-18, 2016.

SECARB Early Test Retrospective: presented at Plenary Session of NETL Project Review Meeting, Pittsburgh, Pa., August 15-18, 2016.

CCUS and Net Carbon Negative Oil: presented at Research Experience in Carbon Sequestration (RECS), Birmingham, Ala., June 12-20, 2016.

CCUS and Net Carbon Negative Oil: presented at Research Experience in Carbon Sequestration (RECS), Birmingham, Ala., June 12-20, 2016.

Fundamentals of CO2-Enhanced Oil Recovery: presented at Research Experience in Carbon Sequestration (RECS), Birmingham, Ala., June 12-20, 2016.

Carbon life cycle analysis of CO2- EOR for net carbon negative oil (NCNO) classification: project overview: presented to delegates from DOE, USGS, US EPA, DOJ, and BOEM, presented at Federal Interagency CCS meeting, via Webex to meeting in Washington, DC, December 14, 2015.

Carbon life cycle analysis of CO₂- EOR for net carbon negative oil (NCNO) classification: project overview: presented to DOE's Strategic Energy Analysis and Planning division, presented at DOE's internal meeting, via Webex to meeting in Pittsburgh, PA, November 9, 2015.

CCS critical parameters: practical demonstrations: presented at Research Experience in Carbon Sequestration (RECS), Birmingham, AL, June 7-16, 2015.

Fundamentals of CO₂-enhanced oil recovery: presented at Research Experience in Carbon Sequestration (RECS), Birmingham, AL, June 7-16, 2015.

CO₂-EOR case studies: presented at Asia Pacific Economic Cooperation Expert Workshop, Meridian, Mississippi, February 2-3, 2015.

Monitoring, verification and accounting (MVA) approaches: presented at Asia Pacific Economic Cooperation Expert Workshop, Meridian, Mississippi, February 2-3, 2015.

USA large-scale onshore projects: presented to 20th United Nations Conference of Parties (COP20), presented at UNFCCC Side Event, Lima, Peru, December 9, 2014.

Lessons Learned in CO₂ Enhanced Oil Recovery Projects in the U.S.: presented to Clean Technologies Group, Instituto Colombiano del Petroleo, Ecopetrol, presented at CCUS Workshop for GCCC-ICP Collaboration, Club Campestre, ICP, Bucaramanga, Colombia, July 31-August 1, 2014.

Modeling and Monitoring Experience Specific to CO₂ Injection into Geologic Formations: presented to Clean Technologies Group, Instituto Colombiano del Petroleo (ICP), Ecopetrol, presented at CCUS Workshop for GCCC-ICP Collaboration, Club Campestre, ICP, Bucaramanga, Colombia, July 31-August 1, 2014.

Monitoring of Variables in CO₂ Injection Projects for Enhanced Oil Recovery: presented to Clean Technologies Group, Instituto Colombiano del Petroleo, Ecopetrol, presented at CCUS Workshop for GCCC-ICP Collaboration, Club Campestre, ICP, Bucaramanga, Colombia, July 31-August 1, 2014.

Carbon Storage for Commercial Enhanced Oil Recovery: presented to Petroleum Engineers Club of Dallas, presented at end-of-year luncheon meeting, keynote talk, Dallas, Tex., December 2, 2011.

Presentations

A Comparative Study of CO₂-Flood Displacement Efficiency for Different CO₂ Injection Strategies: Permian Basin vs. U.S. Gulf Coast: presented at 14th International Conference on Greenhouse Gas Control Technologies, Melbourne, Australia, October 21-25, 2018.

EOR and GCS Co-optimization with Carbon Life-Cycle Analysis Considerations: presented at 14th International Conference on Greenhouse Gas Control Technologies, Melbourne, Australia, October 21-25, 2018.

The U.S. Gas Flooding Experience: CO₂ Injection Strategies and Impact on Ultimate Recovery: presented at 38th IEA-EOR Workshop & Symposium, Yucatan, Mexico, September 26-29, 2017.

CO₂-EOR: An Option for Carbon Neutral Oil?: presented at Bureau of Economic Geology Symposium, The University of Texas at Austin, September 15, 2017.

Validating CO₂-EOR as a CCUS technology: presented to the CCUS Policy/Legislation/Regulations for Furthering R&D and Deployment section, presented at Carbon Management Technology Conference, CMTC 2015, Sugar Land, TX, November 16-19, 2015.

Carbon life cycle analysis of CO₂-EOR for net carbon negative oil (NCNO) classification: presented at NETL Project Review Meeting, Pittsburgh, PA, August 18-20, 2015.

Unconventional EOR: CO₂-EOR carbon balance: presented to GCCC Industrial Associates, presented at GCCC Sponsors Meeting, Houston, TX, July 14, 2015.

Fundamentals of enhanced oil recovery and applicability to Mexico: presented at Latin American Forum on Energy and Environment, Mexico City, Mexico, April 15-16, 2015.

CO₂-EOR carbon balance: new DOE study: presented to GCCC Industrial Associates, presented at GCCC Sponsors Meeting, Austin, TX, January 21, 2015.

Fundamentals of monitoring CO₂ injected underground: presented at Global CCS Institute, November 7, 2013.

CO₂-EOR potential in the Gulf Coast: presented at Coal-Gen, Session 1-C-CO₂ Enhanced Oil Recovery-Show me the Money-Panel Discussion, Louisville, Kentucky, August 16, 2012.

CCS risk analysis: presented at 1st Basic Course, "Understanding Carbon Capture and Storage," organized by the Center of Excellence in Research and Innovation in Petroleum, Mineral Resources and Carbon Storage (CEPAC), and the Carbon Sequestration Leadership Forum (CSLF), Porto Alegre, Brazil, August 3, 2012.

CO₂ monitoring, measuring, and verification: presented at 1st Basic Course, "Understanding Carbon Capture and Storage," organized by the Center of Excellence in Research and Innovation in Petroleum, Mineral Resources and Carbon Storage (CEPAC), and the Carbon Sequestration Leadership Forum (CSLF), Porto Alegre, Brazil, August 2, 2012.

CO₂ enhanced oil recovery: presented at 1st Basic Course, "Understanding Carbon Capture and Storage," organized by the Center of Excellence in Research and Innovation in Petroleum, Mineral Resources and Carbon Storage (CEPAC), and the Carbon Sequestration Leadership Forum (CSLF), Porto Alegre, Brazil, July 31, 2012.

Commercial EOR monitoring at the Hastings field: presented at the STORE-Chevron hands-on workshop for Norwegian Petroleum Engineering students, Houston, Texas, January 19, 2012.

Carbon storage for commercial EOR: invited luncheon talk, presented at Petroleum Engineers Club of Dallas, Dallas, Texas, December 2, 2011.

Moving Permian Basin technology to the Gulf Coast: the geologic distribution of CO₂ EOR potential in Gulf Coast reservoirs: presented at West Texas Geological Society Symposium, Midland, Texas, October 27, 2006.

Quick-look assessments to identify optimal CO₂ EOR strategies: presented at CO₂SC Symposium, Lawrence Berkeley National Laboratory, Berkeley, California, March 20-22, 2006.

Quick-Look Assessments to Identify Optimal CO₂-EOR Storage Sites: presented at International Symposium on Site Characterization for CO₂ Geological Storage (CO₂SC), Berkeley, Calif., March 13-15, 2006.

Reserve growth potential from CO₂ enhanced oil recovery along the Gulf Coast: presented to PTTC, Houston, Texas, December 13, 2005.

Moving Permian Basin Technology to the Gulf Coast:

The Geologic Distribution of CO₂ EOR Potential in Gulf

Coast Reservoirs: presented at West Texas Geological Society (WTGS) Fall Symposium, October 26-28, 2005.

CCS in the U.S.A: The Gulf Coast Carbon Center experience, 2nd Course of Advanced Topics in Carbon Capture and Storage, CSLF (Carbon Sequestration Leadership Forum) & CEPAC (Center of Excellence in CCS Research and Innovation), Porto Alegre, Brazil, April 2014

CO₂ monitoring in EOR Projects: 1st Course of Advanced Topics in Carbon Capture and Storage, CSLF (Carbon Sequestration Leadership Forum) & CEPAC (Center of Excellence in CCS Research and Innovation), Porto Alegre, Brazil, April 2014

The Global Status of Carbon Capture & Storage & CO₂-EOR, Global CCS Institute webinar presentation,
<http://www.globalccsinstitute.com/get-involved/webinars/2013/12/19/global-status-carbon-capture-storage-co2-eor>, December 2013

CO₂ Storage, Monitoring, Verification, and Accounting, presented at a collaborative symposium on CO₂ EOR between universities in Texas and Norway, the oil industry in Texas and Norway, and other stakeholders, Houston, Texas, November 2013

Fundamentals of modeling CO₂ movement underground, Global CCS Institute webinar presentation,
<http://www.globalccsinstitute.com/get-involved/webinars/2013/10/02/fundamentals-modelling-co2-movement-underground>, October 2013

Methodologies and guidelines for selection of storage sites in saline aquifers, Global CCS Institute Webinar,
<http://www.globalccsinstitute.com/get-involved/webinars/2013/08/28/methodologies-and-guidelines-selection-storage-sites-saline>, August 2013

Activities of a Professional Nature

Professional Societies

American Association of Petroleum Geologists

Society of Petroleum Engineers

Activities of a Professional Nature

Guest Editor, CO₂ special section of the January 2020 issue of The Leading Edge, a publication of the Society of Exploration Geophysicists (SEG) (July 2019-January 2020)

Funding

Research Support

Principal Investigator: Carbon Life Cycle Analysis of CO₂-EOR for Net Carbon Negative Oil (NCNO) Classification, DOE-NETL (January 1, 2015-December 31, 2018; \$1,217,000).

Principal Investigator: SENER Mexico - CCS Capacity Development (September 19, 2016-May 31, 2017; \$70,849).

Co-Principal Investigator: Demonstration of de-facto CO₂ storage at a CO₂-EOR site, Cranfield, MS, Carbon Capture Project 4 (CCP4) (November 1, 2015-October 31, 2016; \$120,374).

Recruiter: Ecopetrol membership to GCCC (IA), Ecopetrol (September 1, 2014-December 31, 2015; \$50,000).

Principal Investigator: Interim Support between Phases I and II of NRG CCPI-3, Petra Nova Parish Holdings LLC (July 1, 2013-December 31, 2014; \$74,188).

Principal Investigator: Development of a Geologic Carbon Sequestration Resource of References, Chevron (October 1, 2013-January 31, 2014; \$30,254).

Principal Investigator: Leveraging Geologic CO₂ Storage Technology for CO₂-EOR Management, Chevron (August 1-December 31, 2012; \$36,752).

Publications

Peer Reviewed Journal Articles

Yáñez, E., Ramírez, A., Núñez-López, V., Castillo, E., and Faaij, A., 2020, Exploring the potential of carbon capture and storage-enhanced oil recovery as a mitigation strategy in the Colombian oil industry: International Journal of Greenhouse Gas Control, v. 94, no. 102938, 36 p., <http://doi.org/10.1016/j.ijggc.2019.102938>.

Núñez-López, V., and Moskal, E., 2019, Potential of CO₂-EOR for near-term decarbonization: *Frontiers in Climate*, 14 p., <http://doi.org/10.3389/fclim.2019.00005>.

Núñez-López, V., Gil-Egui, R., and Hosseini, S. A., 2019, Environmental and operational performance of CO₂-EOR as a CCUS technology: a Cranfield example with dynamic LCA considerations: *Energies*, v. 12, no. 3, 15 p., <http://doi.org/10.3390/en12030448>, Article 448.

Hosseini, S. A., Alfi, M., Nicot, J.-P., and Núñez-López, V., 2018, Analysis of CO₂ storage mechanisms at a CO₂-EOR site, Cranfield, Mississippi: *Greenhouse Gases: Science and Technology*, v. 8, p. 469-482, <http://doi.org/10.1002/ghg.1754>.

Hosseini, P., Hosseini, S. A., Núñez-López, V., and Lake, L. W., 2018, Impact of field development strategies on CO₂ trapping mechanisms in a CO₂-EOR field: a case study in the Permian Basin (SACROC unit): *International Journal of Greenhouse Gas Control*, v. 72, p. 92-104, <http://doi.org/10.1016/j.ijggc.2018.03.002>.

Ambrose, W. A., Breton, C., Núñez-López, V., and Gülen, G., 2015, EOR potential from CO₂ captured from coal-fired power plants in the Upper Cretaceous (Cenomanian) Woodbine Group, East Texas Basin, and southeastern Texas Gulf Coast, USA: *Natural Resources Research*, v. 24, no. 2, p. 161-188, <http://doi.org/10.1007/s11053-014-9242-z>.

King, C. W., Gülen, G., Cohen, S. M., and Núñez-López, V., 2013, The system-wide economics of a carbon dioxide capture, utilization, and storage network: Texas Gulf Coast with pure CO₂-EOR flood: *Environmental Research Letters*, v. 8, 16 p., <http://doi.org/10.1088/1748-9326/8/3/034030>.

Ambrose, W. A., Breton, C., Núñez-López, V., and Gülen, G., 2012, Geologic and economic criteria for siting clean-coal facilities in the Texas Gulf Coast, USA: *Natural Resources Research*, v. 21, no. 4, p. 461-481.

Zahid, K., Hosseini, S. A., Núñez-López, V., and Hovorka, S. D., 2012, Characterizing CO₂ storage reservoirs and shallow overburden for above-zone monitoring in Texas Gulf Coast EOR fields: *Greenhouse Gases Science and Technology*, v. 2, p. 460-473.

Ambrose, W. A., Breton, C., Hovorka, S. D., Duncan, I. J., Gülen, G., Holtz, M. H., and Núñez-López, V., 2011, Geologic and infrastructure factors for delineating areas for clean coal: examples in Texas, USA: *Environmental Earth Science*, v. 63, p. 513?-532.

Ambrose, W. A., Breton, Caroline, Holtz, M. H., Núñez-López, Vanessa, Hovorka, S. D., and Duncan, I. J., 2009, CO₂ source-sink matching in the lower 48 United States, with examples from the Texas Gulf Coast and Permian Basin: *Environmental Geology: Environmental Geology*, v. 57, p. 1537-1551.

Ambrose, W. A., Lakshminarasimhan, Srivatsan, Núñez-López, Vanessa, Hovorka, S. D., and Duncan, I. J., 2008, Geologic factors controlling CO₂ storage capacity and permanence: case studies based on experience with heterogeneity in oil and gas reservoirs applied to CO₂ storage: *Environmental Geology*, v. 54, p. 1619-1633.

Núñez-López, Vanessa, Wood, D. H., Ambrose, W. A., and Hovorka, S. D., 2008, Quick-look assessments to identify optimal CO₂ EOR storage sites: *Environmental Geology*, v. 54, p. 1695-1706.

Wood, D. J., Lake, L. W., and Núñez-Lopez, Vanessa, 2006, A screening model for CO₂: flooding and storage in Gulf Coast reservoirs based on dimensionless groups: *Society of Petroleum Engineers, SPE Paper No. 100021*.

Peer Reviewed Book Chapters

Hosseini, S. A., Alfi, M., Nicot, J.-P., and Núñez-López, V., 2022, Demonstration of de-facto CO₂ storage at a CO₂-EOR site, Cranfield, MS, in Gerdes, K. F., ed., *Carbon dioxide capture for storage in deep geologic formations--results from the CO₂ Capture Project: UK*, Short Run Press Limited, v. 5, p. 473-526.

Non Peer Reviewed Journal Articles

Bump, A. P., Hovorka, S. D., Meckel, T. J., Nuñez-López, V., Olariu, M. I., and Treviño, R. H., 2020, Carbon capture and storage potential in southern Louisiana: a new business opportunity: *GeoGulf Transactions*, v. 70, p. 73-84.

Gil-Egui, R., and Nuñez-López, V., 2019, A sustainable approach to decision-making in CCUS systems: 14th Greenhouse Gas Control Technologies Conference, GHGT-14, Proceedings, 21-26 October, Melbourne, Australia, 7 p., <http://doi.org/10.2139/ssrn.3380459>.

Hosseininoosheri, P., Hosseini, S. A., Nuñez-López, V., and Lake, L. W., 2019, A comparative study of CO₂-flood displacement efficiency for different CO₂ injection strategies: Permian Basin vs. U.S. Gulf Coast: 14th Greenhouse Gas Control Technologies Conference, GHGT-14, Proceedings, 21-26 October, Melbourne, Australia, 10 p.

Nuñez-López, V., Gil-Egui, R., and Hosseini, S. A., 2019, CO₂-EOR and GCS co-optimization with carbon lifecycle analysis considerations: 14th Greenhouse Gas Control Technologies Conference, GHGT-14, Proceedings, 21-26 October, Melbourne, Australia, 12 p., <http://doi.org/10.2139/ssrn.3366074>.

Yañez Angarita, E. E., Ramirez, A., Nuñez-López, V., Castillo, E., and Faaij, A., 2019, Exploring the potential of CO₂-EOR as a mitigation strategy in the Colombian oil value chain: 14th Greenhouse Gas Control Technologies Conference, GHGT-14, Proceedings, 21-26 October, Melbourne, Australia, 4 p.

Hosseininoosheri, P., Hosseini, S. A., Nuñez-López, V., and Lake, L. W., 2018, Evolution of CO₂ utilization ratio and CO₂ storage under different CO₂ - EOR operating strategies: a case study on SACROC unit Permian Basin: <http://doi.org/10.2118/190038-MS>, presented at the SPE Western Regional Meeting held in Garden Grove, California, USA, 22-27 April.

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Nuñez-López, V., Gil-Egui, R., Gonzalez-Nicolas, A., and Hovorka, S. D., 2017, Carbon balance of CO₂-EOR for NCNO classification: *Energy Procedia*, v. 114, p. 6597-6603, <http://doi.org/10.1016/j.egypro.2017.03.1803>.

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