

Geologic Storage and Simulation and Risk Assessment Projects and Congressional Districts

Title	Performer	Congressional District
"Carbonsheds" as a Framework for Optimizing US CCS Pipeline Transport on a Regional to National Scale	Duke University	NC04
A Modular Curriculum for Training University Students in Industry Standard CO ₂ Sequestration and Enhanced Oil Recovery Methodologies	University of Texas of the Permian Basin	TX11
Actualistic and Geomechanical Modeling of Reservoir Rock, CO ₂ and Formation Fluid Interaction, Citronelle Oil Field, Alabama	West Virginia University	WV1
Advancing the State of Geologic Sequestration Technologies towards Commercialization	Lawrence Livermore National Laboratory	CA10
Advancing the State of Geologic Sequestration Technologies towards Commercialization and Pre-Combustion Capture Goals	Los Alamos National Laboratory	NM03
An Advanced Joint Inversion System for CO ₂ Storage Modeling with Large Data Sets for Characterization and Real-Time Monitoring - Enhancing Storage Performance and Reducing Failure Risks Under Uncertainties	Stanford University	CA14
Analysis of Microbial Activity Under a Supercritical CO ₂ Atmosphere	Massachusetts Institute of Technology	MA08
Analysis of Potential Leakage Pathways and Mineralization in Caprocks for Geological Storage of CO ₂	Utah State University	UT01
Analytical-Numerical Sharp-Interface Model of CO ₂ Sequestration & Application to Illinois Basin	New Mexico Institute of Mining and Technology	NM01
Argonne National Laboratory - Management of Water from Carbon Capture and Storage	Argonne National Laboratory	IL13
Assessing Reservoir Depositional Environments to Develop and Quantify Improvements in CO ₂ Storage Efficiency: A Reservoir Simulation Approach	Illinois State Geologic Survey	IL13
Assessment of Factors Influencing Effective CO ₂ Storage Capacity and Injectivity in Eastern Gas Shales	Advanced Resources International, Inc.	VA08
Basin-Scale Leakage Risks from Geologic Carbon Sequestration: Impact on CCS Energy Market Competitiveness	Princeton University	NJ12
Carbon Dioxide Sealing Capacity: Textural or Compositional Controls?	Brooklyn College	NY10
CO ₂ at the Interface: Nature and Dynamics of the Reservoir/Caprock Contact and Implications for Carbon Storage Performance	New Mexico Institute of Mining and Technology	NM01
CO ₂ Geological Storage: Coupled Hydro-Chemo-Thermo-Mechanical Phenomena - "From Pore-Scale Processes to Macroscale Implications"	Georgia Institute of Technology	GA05
Commercial Scale CO ₂ Injection and Optimization of Storage Capacity in the Southeastern United States	Advanced Resources International, Inc.	VA08
Comprehensive, Quantitative Risk Assessment of CO ₂ Geologic Sequestration	Headwaters Technology Innovation Group	NJ12
Development and Test of a 1,000-Level 3C Fiber Optic Borehole Seismic Array Applied to Carbon Sequestration	Paulsson, Inc.	CA27
Development of a Software Framework for System Level Carbon Sequestration Risk Assessment	GoldSim Technology Group	WA08
Development of Improved Caprock Integrity Analysis and Risk Assessment Techniques	GeoMechanics Technologies	CA32
Enhanced Simulation Tools to Improve Predictions and Performance of Geologic Storage: Coupled Modeling of Fault Poromechanics, and High-Resolution Simulation of CO ₂ Migration and Trapping	Massachusetts Institute of Technology	MA08
Experimental Design Applications for Modeling and Assessing Carbon Dioxide Sequestration in Saline Aquifers	Fusion Petroleum Technologies, Inc.	TX08
Field Test and Evaluation of Engineered Biomineralization Technology for Sealing Existing Wells	Montana State University	MT01
Geo-Chemo-Mechanical Studies for Permanent CO ₂ Storage in Geologic Reservoirs	Columbia University	NY10

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Geologic Sequestration Training and Research	University of Alabama	AL07
Geological and Geotechnical Site Investigations for the Design of a CO ₂ Rich Flue Gas Direct Injection and Storage Facility in an Underground Mine - Keweenaw Basalts of the Great Lakes Region	University of Alaska Fairbanks	AK01
Geomechanical Simulation of CO ₂ Leakage and Cap Rock Remediation	Missouri University of Science and Technology (Miners Circle)	MO08
Geomechanical Simulation of Fluid-Driven Fractures	University of Minnesota	MN05
Geoscience Perspectives in Carbon Sequestration: Educational Training and Research Through Classroom, Field, and Laboratory Investigations	Missouri University of Science and Technology	MO08
High Fidelity Computational Analysis of CO ₂ Sorption at Pore Scales in Coal Seams	University of Texas at El Paso	TX16
Inexpensive Modeling and Uncertainty Assessment of CO ₂ Plume Migration	University of Texas at Austin	TX21
Influence of Local Capillary Trapping on Containment System Effectiveness	University of Texas at Austin	TX21
Integrated Experimental and Modeling Studies of Mineral Carbonation as a Mechanism for Permanent Carbon Sequestration in Mafic/ultramafic Rocks	Yale University	CT03
Interdisciplinary Investigation of CO ₂ Sequestration in Depleted Shale Gas Formation	Stanford University	CA14
Lawrence Berkeley National Laboratory - Consolidated Sequestration Research Project	Lawrence Berkeley National Laboratory	CA09
Maximization of Permanent Trapping of CO ₂ and Co-contaminants in the Highest Porosity Formations of the Rock Spring Uplift (Southwest Wyoming): Experimentation and Multi-Scale Modeling	University of Wyoming	WY01
Microbial and Chemical Enhancement of In-Situ Carbon Mineralization in Geologic Formation	Columbia University	NY10
Model Complexity and Choice of Model Approaches for Practical Simulations of CO ₂ Injection, Migration, Leakage, and Long-term Fate	Princeton University	NJ12
Modeling and Risk Assessment of CO ₂ Sequestration at the Geologic-Basin Scale	Massachusetts Institute of Technology	MA08
Molecular Simulation of Dissolved Inorganic Carbons for Underground Brine CO ₂ Sequestration	California Institute of Technology	CA27
Monitoring and Numerical Modeling of Shallow CO ₂ Injection, Greene County, Missouri	Missouri State University	MO07
Multi-Objective Optimization Approaches for The Design of Carbon Geological Sequestration Systems	Colorado State University	CO02
Novel Materials for Robust Repair of Leaky Wellbores in CO ₂ Storage Formations	University of Texas at Austin	TX21
Numerical Modeling of Geomechanical Processes Related to CO ₂ Injection within Generic Reservoirs	Missouri University of Science and Technology (Miners Circle)	MO08
Optimal Model Complexity in Geological Carbon Sequestration: A Response Surface Uncertainty Analysis	University of Wyoming	WY01
Optimizing Accuracy of Determinations of CO ₂ Storage Capacity and Permanence, and Designing More Efficient CO ₂ Storage Operations: An Example from the Rock Springs Uplift, Wyoming	University of Wyoming	WY01
Optimizing and Quantifying CO ₂ Storage Resource in Saline Formations and Hydrocarbon Reservoirs	UNDEERC	ND01
Pacific Northwest National Laboratory - Capture and Sequestration Support Services	Pacific Northwest National Laboratory (PNNL)	WA04
Proof-of-Feasibility of Using Wellbore Deformation as a Diagnostic Tool to Improve CO ₂ Sequestration	Clemson University	SC03

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Prototype Development and Testing Advanced CO ₂ Leakage Mitigation Using Engineered Biomineralization Sealing Technologies	Montana State University	MT01
Prototyping and Testing a New Volumetric Curvature Tool for Modeling Reservoir Compartments and Leakage Pathways in the Arbuckle Saline Aquifer: Reducing Uncertainty in CO ₂ Storage and Permanence	University of Kansas Center for Research Inc.	KS02
Radiocarbon as a Reactive Tracer for Tracking Permanent CO ₂ Storage in Basaltic Rocks	Columbia University	NY15
Reactive Transport Models with Geomechanics to Mitigate Risks of CO ₂ Utilization and Storage	University of Utah	UT02
Reducing Uncertainties in Model Predictions via History Matching of CO ₂ Migration and Reactive Transport Modeling of CO ₂ Fate at the Sleipner Project, Norwegian North Sea	Indiana University	IN09
Risk Assessment and Monitoring of Stored CO ₂ in Organic Rocks Under Non-Equilibrium Conditions	Southern Illinois University	IL12
Rock Physics of Geologic Carbon Sequestration/Storage	Stanford University	CA14
Shallow Carbon Sequestration Demonstration Pilot	City Utilities of Springfield	MO07
Simulation of Couple Processes of Flow, Transport and Storage of CO ₂ in Saline Aquifers	Colorado School of Mines	CA09
Simplified Predictive Models for CO ₂ Sequestration Performance Assessment	Battelle Memorial Institute	OH15
Systematic Assessment of Wellbore Integrity for Geologic Carbon Storage Projects using Regulatory and Industry Information	Battelle Memorial Institute	OH15
The Coal-Seq III Consortium: Advancing the Science of CO ₂ Sequestration in Coal Seam and Gas Shale Reservoirs	Advanced Resources International	VA08
The Potential Risks of Freshwater Aquifer Contamination with Geosequestration	Duke University	NC01
Training and Research on Probabilistic Hydro-Thermo-Mechanical Modeling of Carbon Dioxide Geological Sequestration in Fractured Porous Rocks	Colorado School of Mines	CO07
Training Graduate and Undergraduate Students in Simulation and Risk Assessment for Carbon Sequestration	Colorado School of Mines	CO07
Training Students to Analyze Spatial and Temporal Heterogeneities in Reservoir and Seal Petrology, Mineralogy, and Geochemistry: Implications for CO ₂ Sequestration Prediction, Simulation, and Monitoring	Purdue University	IN04
Understanding the Impact of CO ₂ Injection on the Subsurface Microbial Community in an Illinois Basin CCS Reservoir: Integrated Student Training in Geoscience & Geomicrobiology	Board of Trustees of the University of Illinois	IL13
Validation of Models Simulating Capillary and Dissolution Trapping During Injection and Post-Injection of CO ₂ in Heterogeneous Geological Formations Using Data from Intermediate Scale Test Systems	Colorado School of Mines	CO07
Web-Based CO ₂ Subsurface Modeling	San Diego State University	CA53
Wellbore Seal Repair Using Nanocomposite Materials	University of New Mexico	NM01