

# Southeast Regional CO<sub>2</sub> Sequestration Technology Training Program (SECARB-Ed)

Presented by:

Gerald R. Hill, Ph.D.

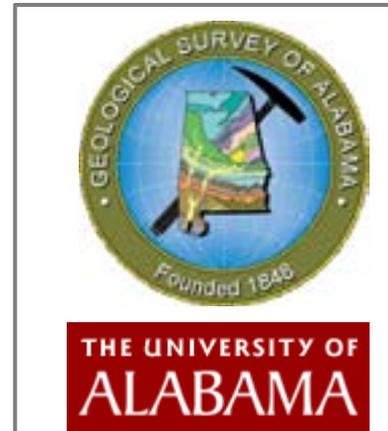
Senior Technical Advisor, Southern States Energy Board

Regional Carbon Sequestration Partnership Annual Review Meeting

Pittsburgh, Pennsylvania

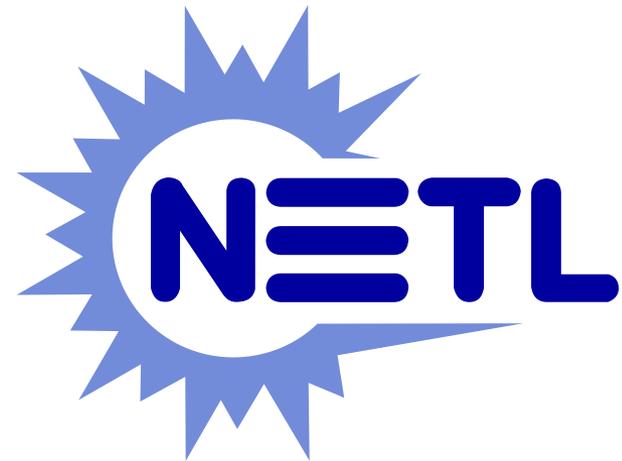
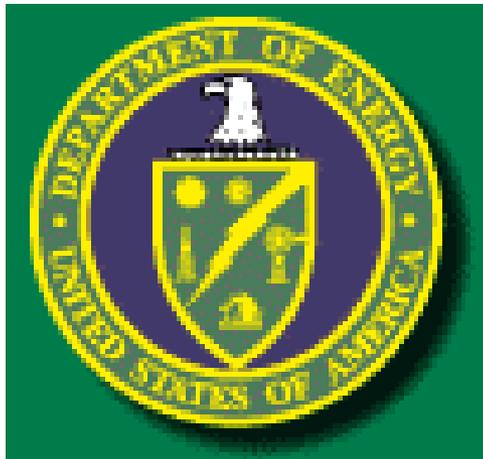
November 18, 2009

# SECARB-Ed Partners



# Acknowledgement

This material is based upon work supported by  
U.S. Department of Energy  
National Energy Technology Laboratory

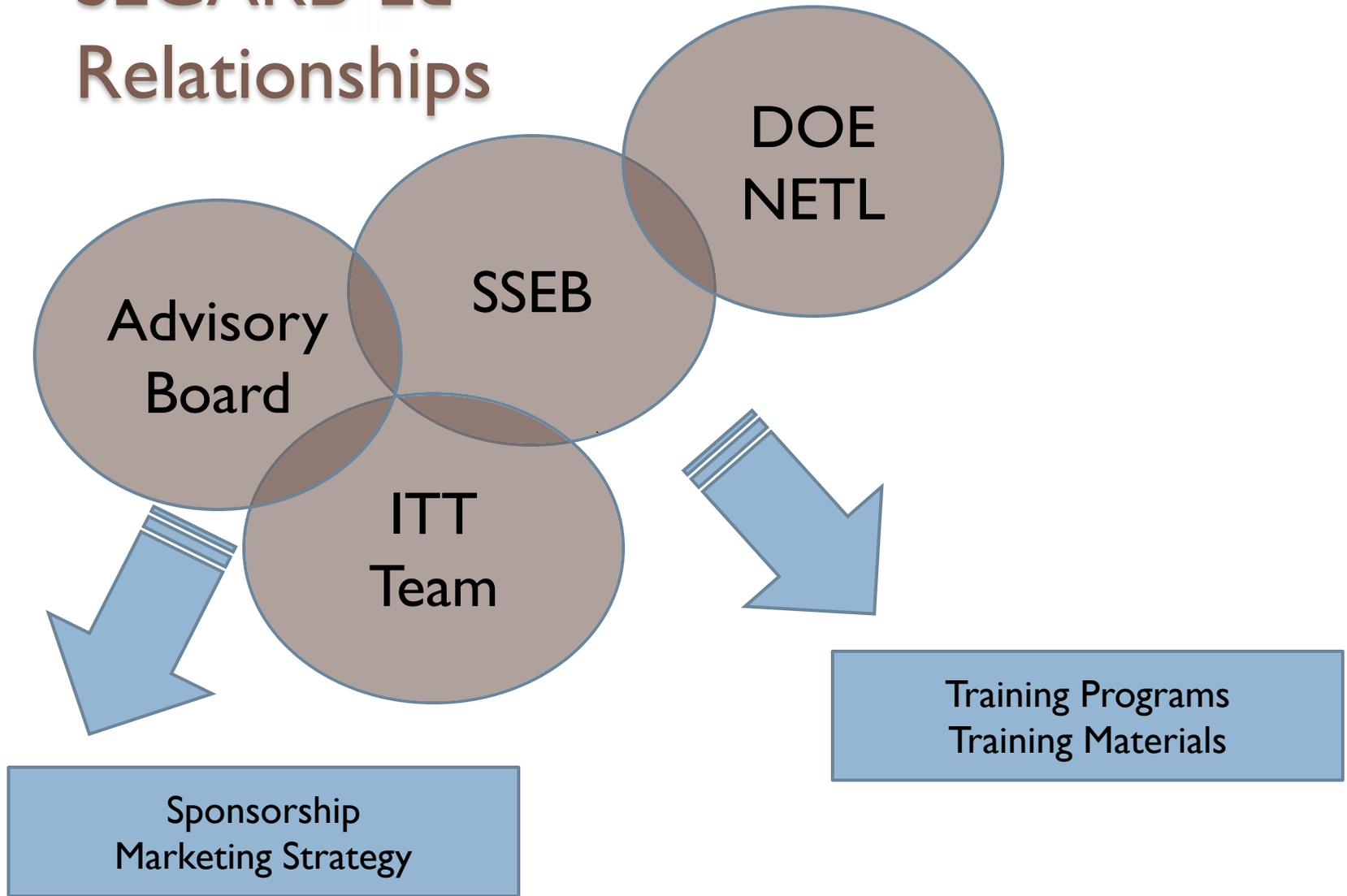


# Purpose, Duration & Investment

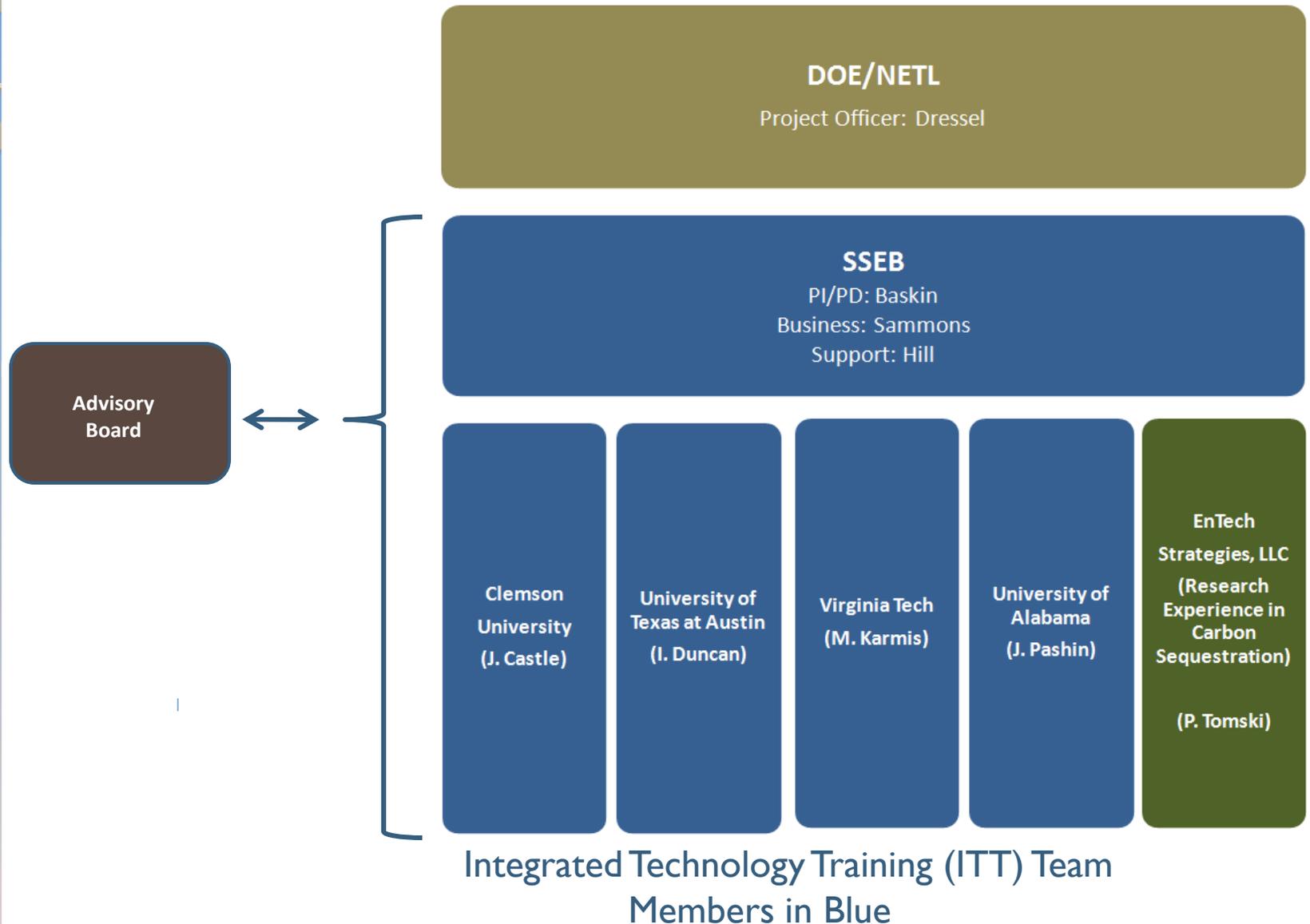
- Purpose: Develop a self-sustaining regional CO<sub>2</sub> sequestration training program to facilitate the transfer of knowledge and technologies required for site development, operations and monitoring of commercial CCS projects.
  - Duration: 36 months
  - Initial Investment:

Total Federal Funds	Total Non-federal Funds	Total Project Cost	Cost-share Percentage
\$994,368.00	\$167,126.00	\$1,161,494.00	14%

# SECARB-Ed Relationships



# SECARB-Ed Communication



# SECARB-Ed Objectives

- Implement sponsorship development program
  - **Advisory Board**
  - **Revenue generating products**
  - **Marketing strategy**
- Develop short courses on CCS technologies
  - **Identify topics**
  - **Work with experts to develop courses**
  - **Identify and work with professional societies**
- Conduct regional training and other activities through outreach and networking
  - **Co-sponsor and participate in relevant CCS events**
  - **Develop and hold training events (e.g., Train the Trainer and CCS Camp)**
- Perform region/basin technology transfer services
  - **Training newsletter**
  - **Regional website, email alerts and technical inquiries**
  - **Coordinate funding work**

# Training Programs/Materials

- Training Programs
  - **CEU/PDU**
  - **Topical Short Courses**
  - **Train the Trainer**
  - **Webinars**
  - **CCS Camp**
- Training Materials
  - **CCS Modules**
  - **Newsletters**
  - **Website Content**
  - **Email Alerts**





# SECARB-Ed Management & Coordination

## Southern States Energy Board

- Manage the SECARB-Ed project and coordinate team activities and CCS module development
- Guide CEU/PDU development/certification and technology training implementation
- Support functions of the Advisory Board, secure sponsorship and implement a marketing strategy
- Interface with other regional sequestration technology training teams and DOE-NETL
- Manage CCS newsletters, website content, email alerts, project services and deliverables

# CCS Topics by Partner

## Southern States Energy Board

GHG  
Fundamentals

Legal,  
Regulatory,  
Institutional

CO<sub>2</sub>  
Transportation

# SECARB-Ed Topics by Partner Southern States Energy Board

- Develop training modules on GHG fundamentals and the role of CCS in meeting policy and technical objectives
- Address legal, regulatory and institutional issues associated with the deployment of CCS technologies
- Provide training modules on CO<sub>2</sub> transportation modes and industry standards related to transportation



# CCS Topics by Partner

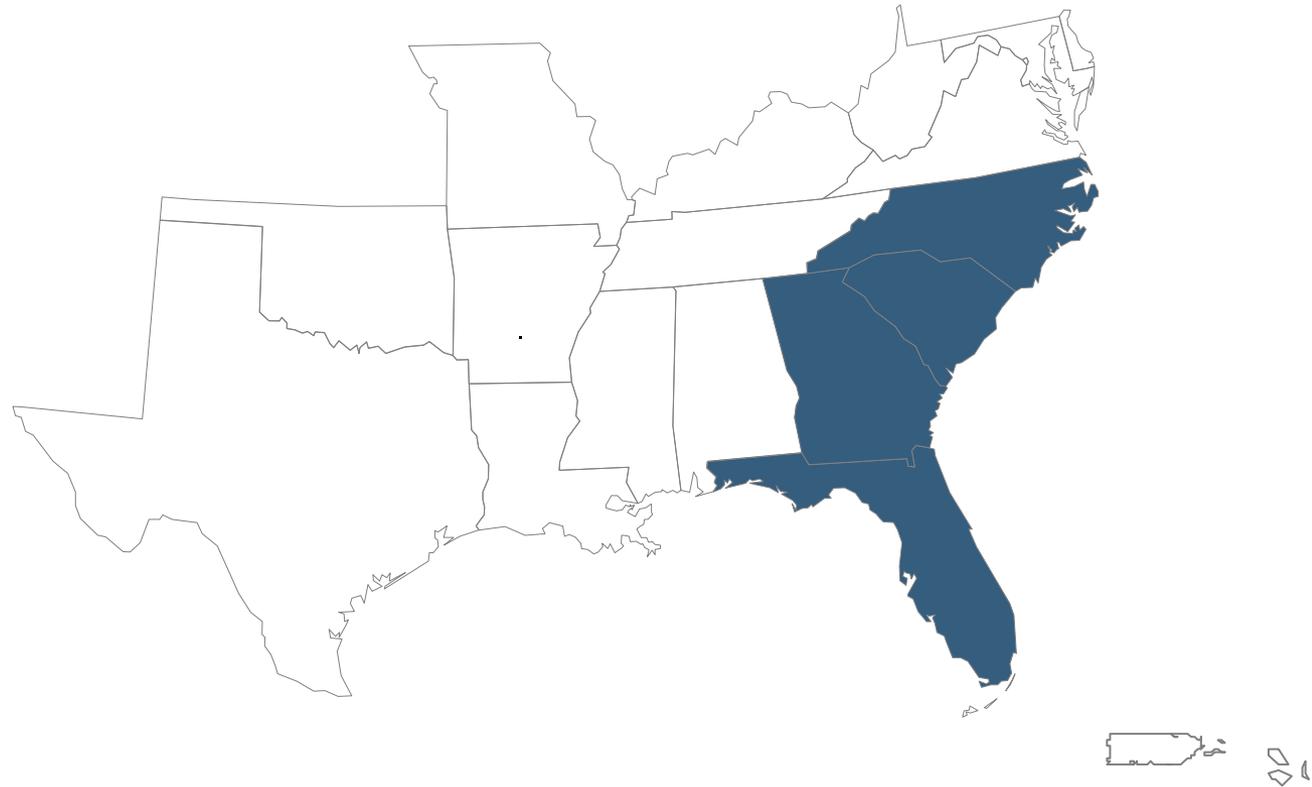
## Clemson University

CO<sub>2</sub> Capture

Treatment &  
Compression

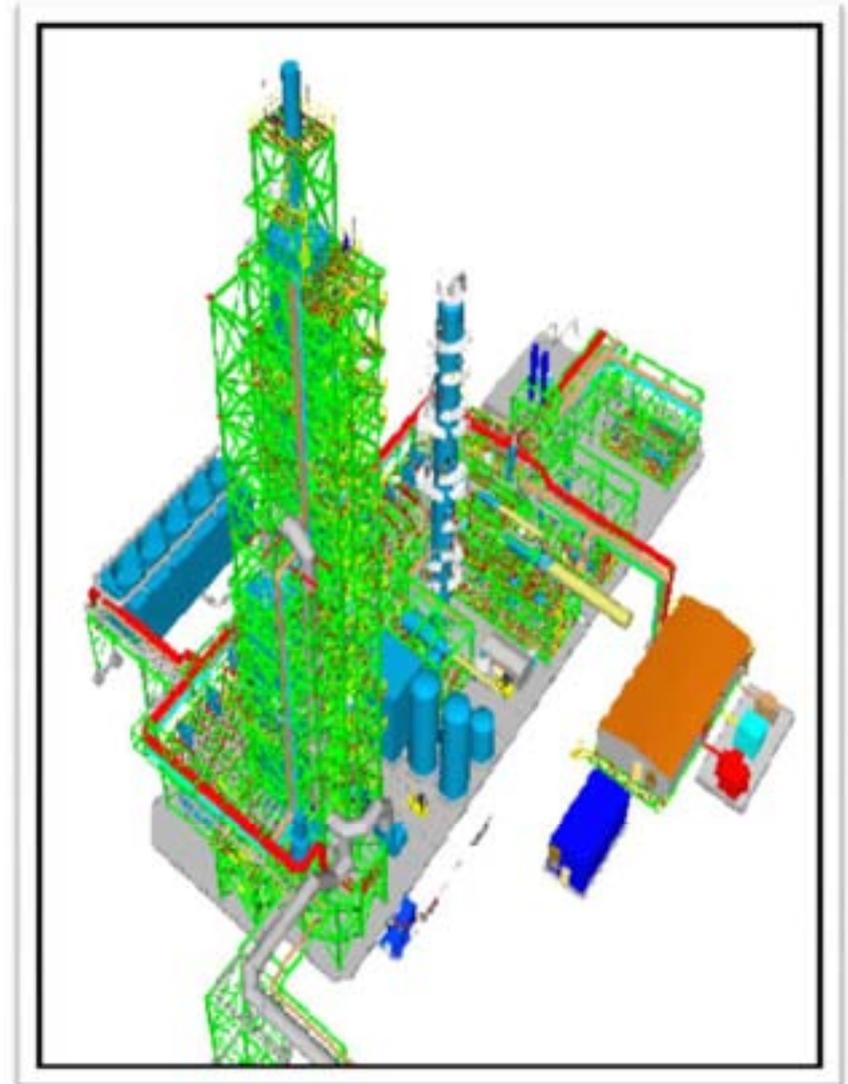
Produced  
Water  
Treatment

# Focused Support: Clemson University



# SECARB-Ed: Clemson University

- Develop training modules on CO<sub>2</sub> capture, treatment and compression systems *(assisted by G. Hill)*
- Develop training modules related to water produced during CO<sub>2</sub> sequestration
- Develop training modules on beneficial use of sequestration waters



# SECARB-Ed: Clemson University

- Conduct CCS training on water related topics at the annual Clemson Hydrogeology Symposium
  - *Symposium held annually for past 17 years*
  - *Average registration approximately 300*
  - *Attendees receive CEUs*
  - *Next symposium: April 1, 2010, Clemson, SC*

# CCS Topics by Partner

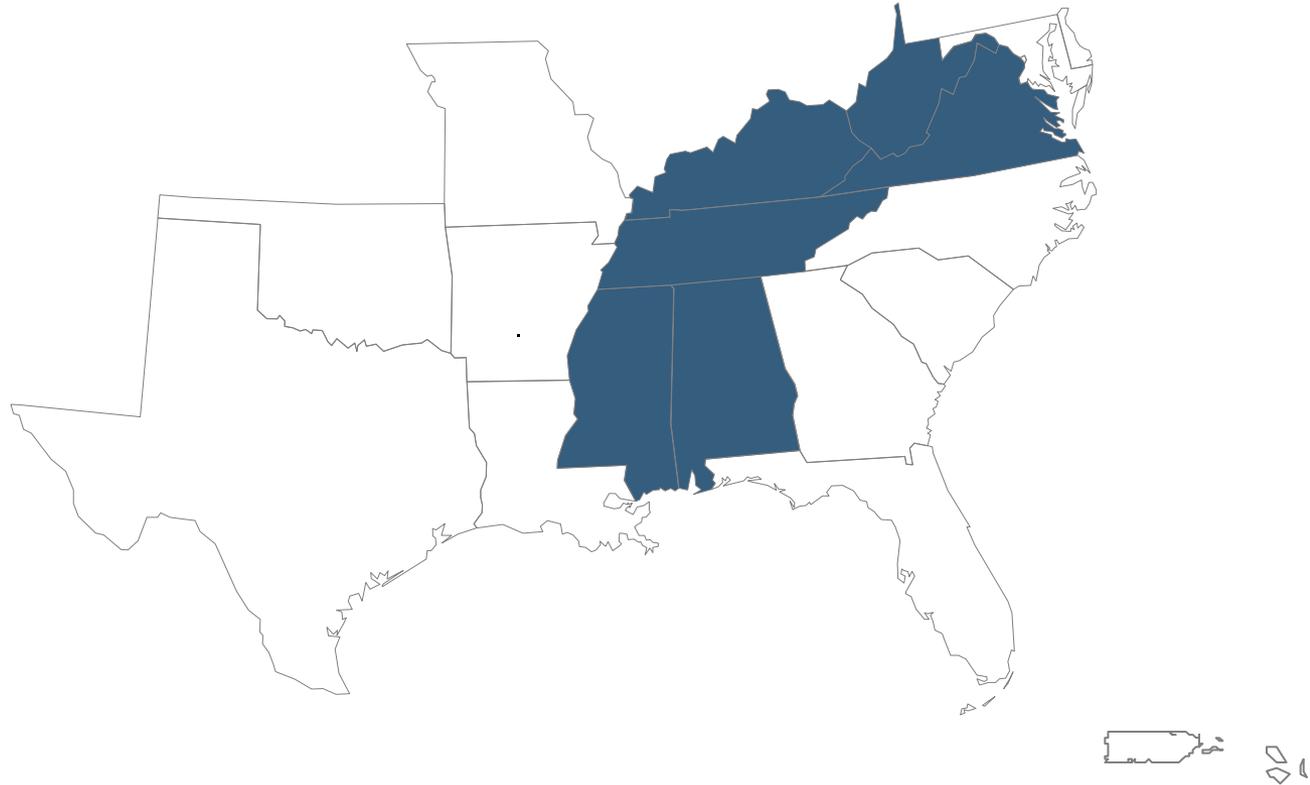
Virginia Tech &  
Geological Survey of Alabama

Coal & Shale

Coalbed  
Methane

Related MVA

# Focused Support: Virginia Tech & Geological Survey of Alabama



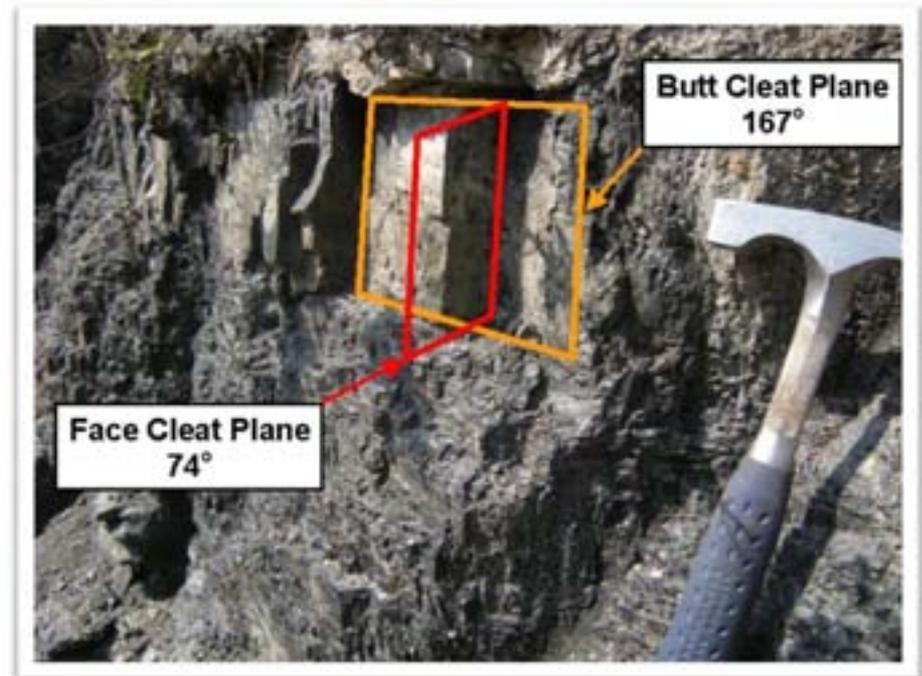
# Development of Course Modules for CCS in Coal and Shale

- Develop short courses on CCS technologies that include coal and shale as a technical focus.
- Modular approach enables a high degree of flexibility in content and presentation method.
- Individual courses or course clusters can be selected so that content/delivery can be tailored for specific groups.



# Course Modules for CCS in Coal and Shale

- Technical modules will be developed to include a national overview with emphasis on geologic sinks in the SECARB region:
  - Coal Seam Sequestration
  - Shale Sequestration
  - Resource and Capacity Assessment
  - Enhanced Gas Recovery
  - Pilot Programs in Coal Seam Sequestration
  - Monitoring, Verification and Accounting



# Deployment of Training Programs

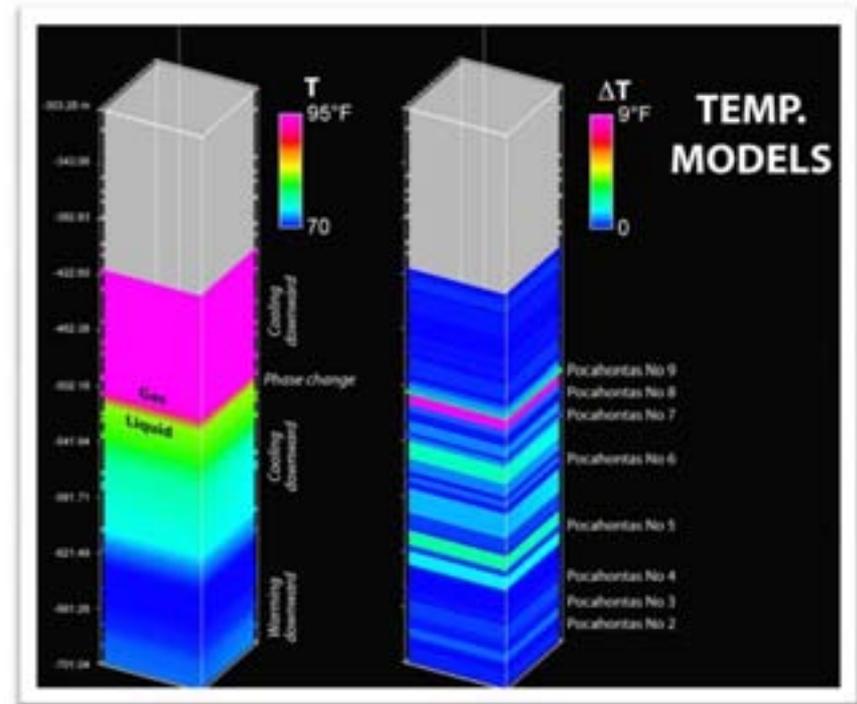
- Develop CCS modules tailored for and delivered to groups with different educational, technical and professional backgrounds including:

- **CEU & PDU Courses**
- **Seminars/Courses in Professional Society Meetings**
- **College-level Lectures/Seminars**
- **Technical and Community College Training Modules**



# Example Program Targets

- Professional Societies:
  - Society for Mining, Metallurgy, and Explorations (SME)
  - American Association of Petroleum Geologists (AAPG) and affiliates
- CCS Training Events:
  - International Coalbed and Shale Gas Symposium
  - Central Appalachian Section of SME



# CCS Topics by Partner

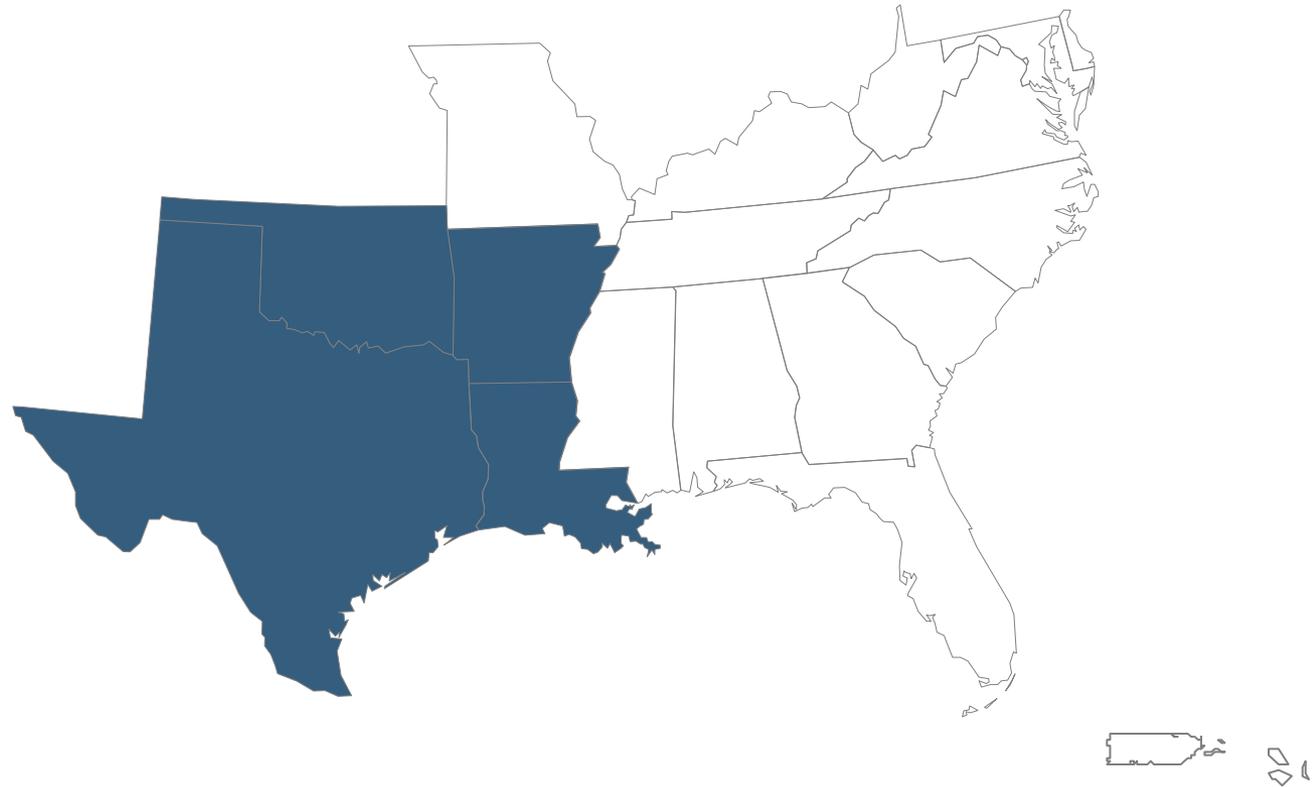
The University of Texas,  
Bureau of Economic Geology

Saline

Oil & Gas

Related MVA

# Focused Support: Bureau of Economic Geology



# UT Bureau of Economic Geology

- Target Audiences
  - State and Federal Regulatory Professionals
  - Professional Scientists and Engineers from companies considering engagement in CCS
  - University students considering a career in CCS
- Collaboration with:
  - Petroleum Technology Transfer Council (PTTC)
  - Society of Petroleum Engineers (SPE)

# UT Bureau of Economic Geology

## Short Course Examples:

- Introduction to CO<sub>2</sub> Sequestration in Brine Reservoirs
- Numerical Modeling of Fate of CO<sub>2</sub> for non-modelers
- CO<sub>2</sub> Sequestration associated with CO<sub>2</sub>-EOR
- Monitoring CO<sub>2</sub> sequestration





# CCS Topics by Partner

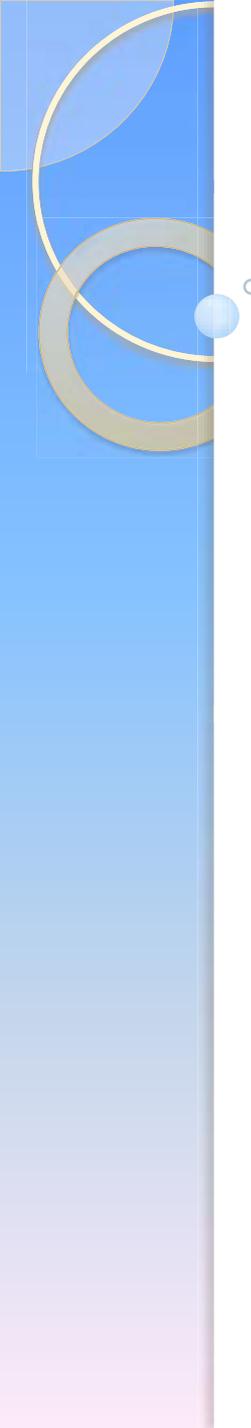
## EnTech Strategies

"Research Experience in Carbon Sequestration"  
in the Southeast

# RECS: Research Experience in Carbon Sequestration

“CCS Camp”





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## Questions?