Microseismicity Panel

U.S. Department of Energy
National Energy Technology Laboratory
Carbon Storage R&D Project Review Meeting
Transforming Technology through Integration and Collaboration
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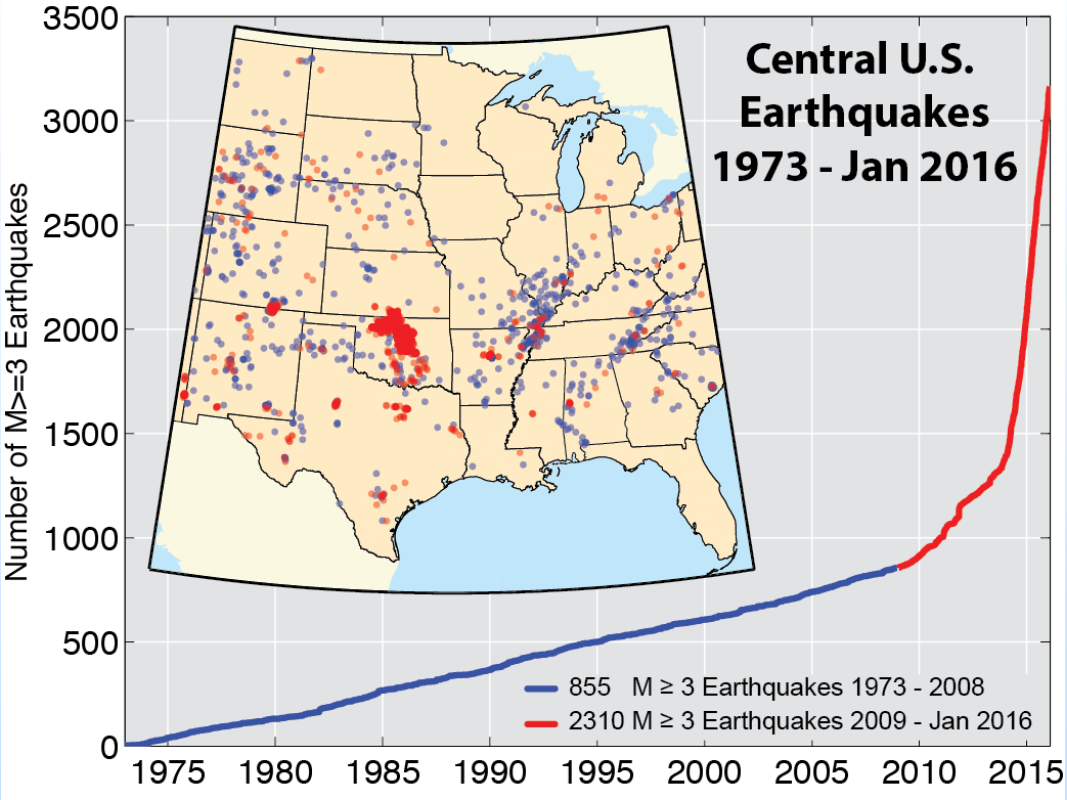
Panel Members

- Bill Leith, USGS
- Josh White, LLNL
- Mike Brudzinski, Miami Univ. of Ohio
- Danielle Sumy, IRIS

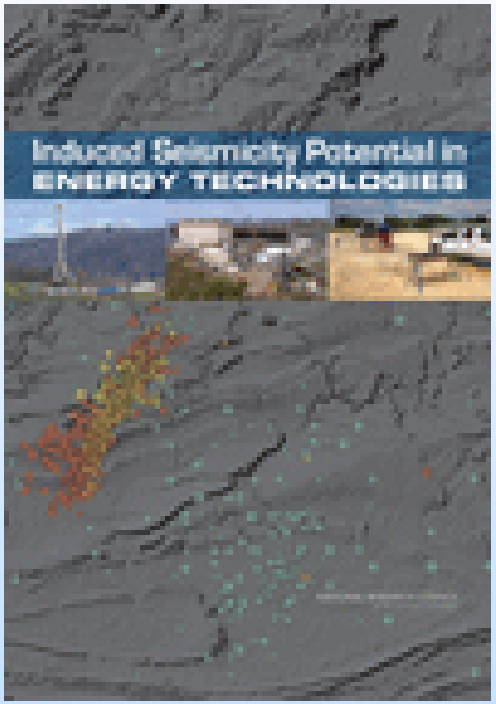
Why do we care now?

- Significant seismicity at geothermal sites.
- Huge increase in seismic events in the mid-continent (Oklahoma) over the past 5 years.
- Preparation for large volumes of CO_2 injection.

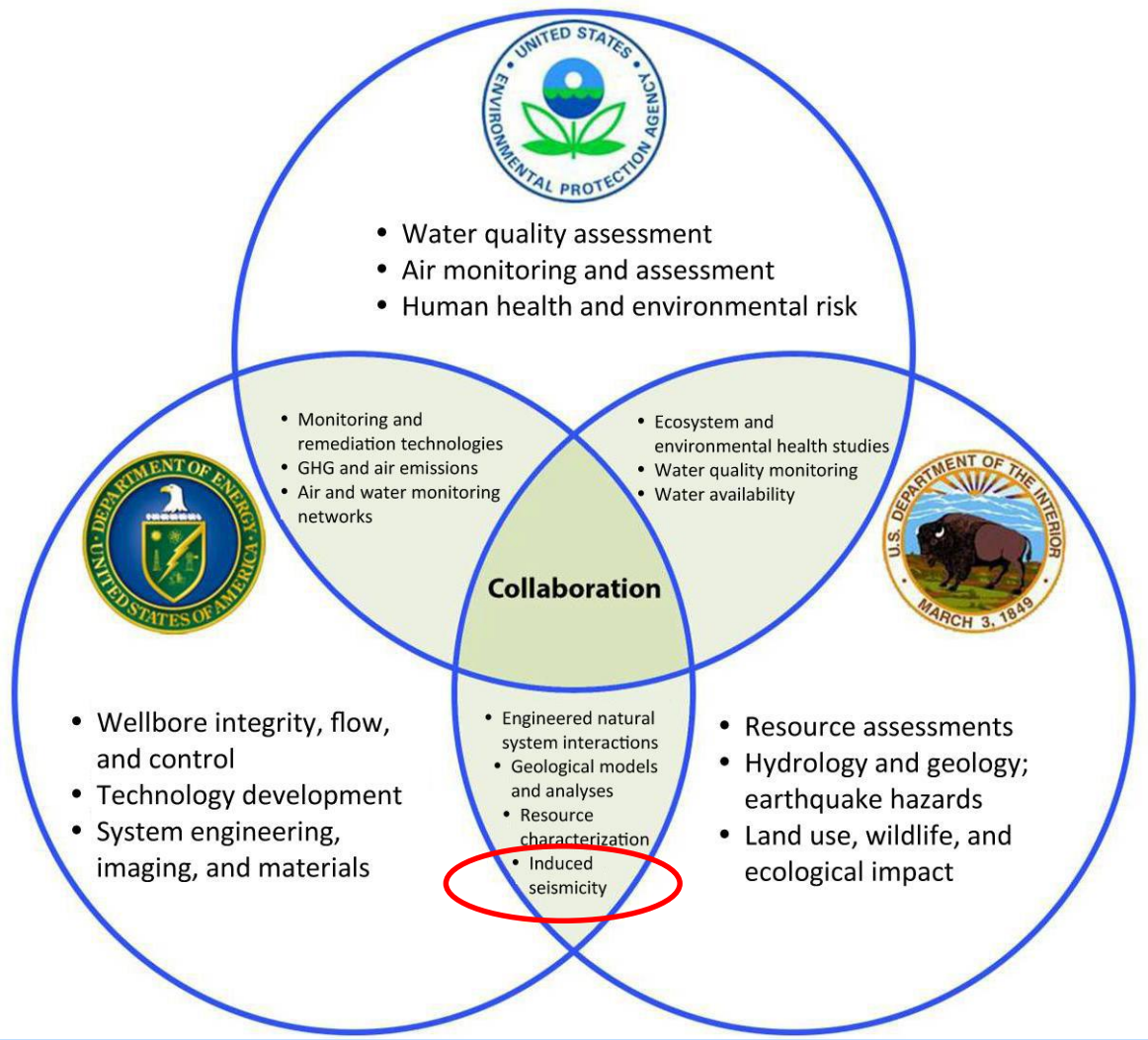


2012 NAS Study on Induced Seismicity

- Three major findings emerged from the study:
  - hydraulic fracturing does not pose a high risk
  - waste water disposal does pose some risk, but frequency of known events is low
  - CCS may have potential for inducing seismic events, but much is unknown.
- "Methodologies can be developed for quantitative, probabilistic hazard assessments of induced seismicity risk."
- Need for federal agencies to coordinate on induced seismicity response.

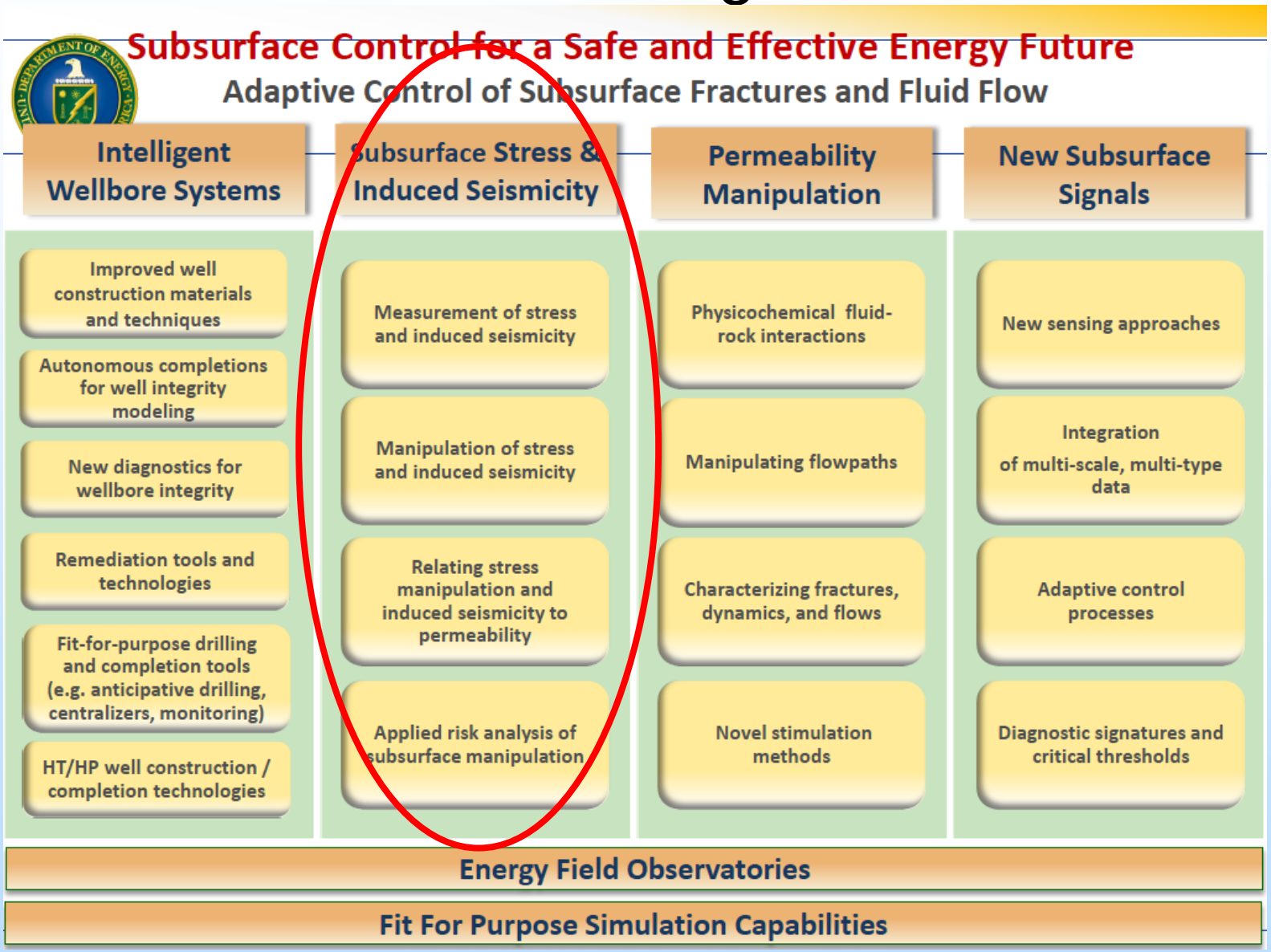


Collaboration between agencies on unconventional O&G for IS

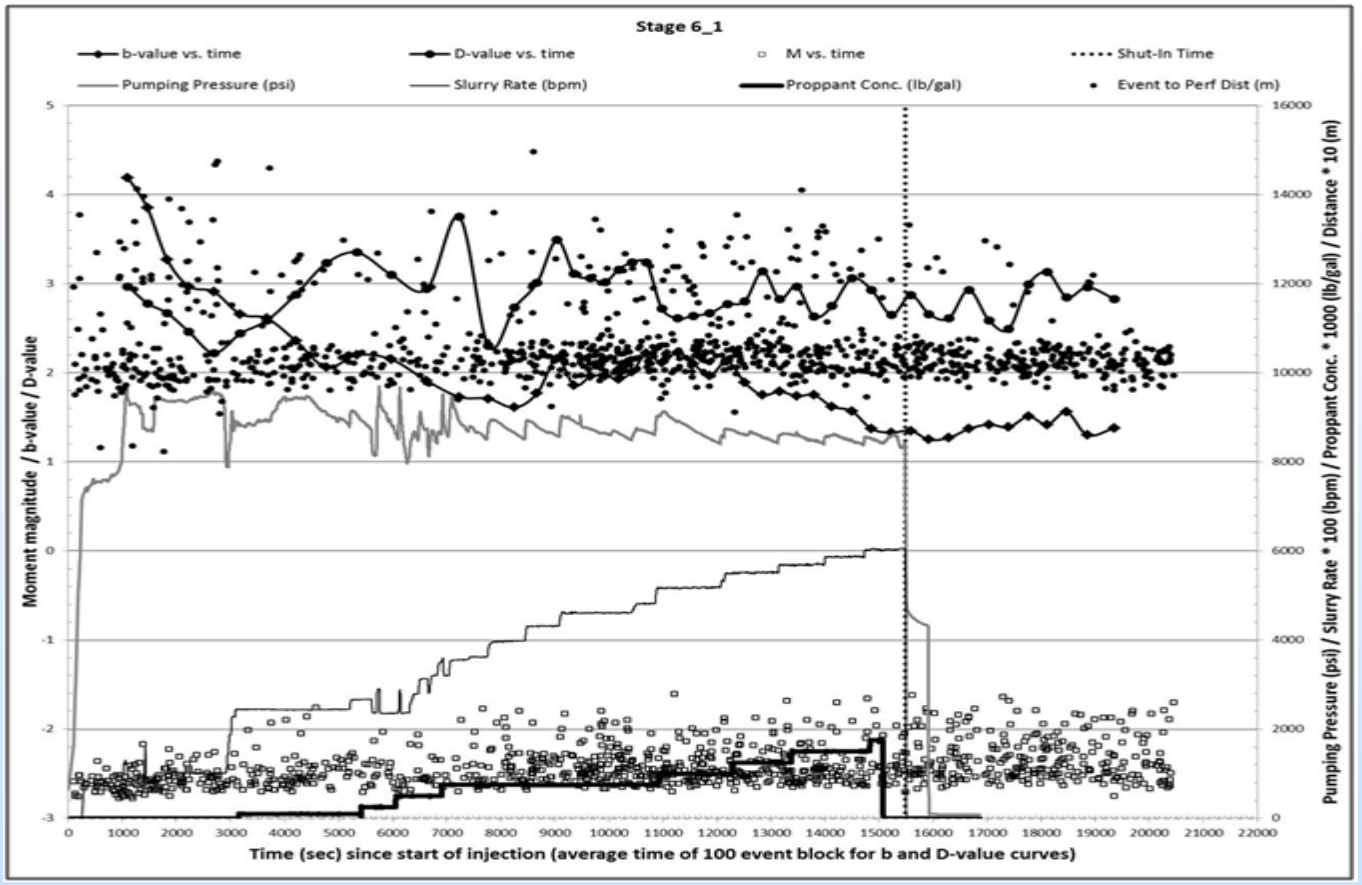


Collaboration with USGS; strong interest by EPA

Seismicity is a major crosscutting issue.



Seismicity can be beneficial.



- Microseismic data can improve diagnostics on hydraulic fracturing.
- Source of monitoring for stress changes and fluid movement.
- Lots more work to do before this type of analysis is robust.