Matthew Grasinger, Daniel O'Malley, Velimir Vesselinov, and Satish Karra, 2016, Decision analysis for robust CO2 injection: Application of Bayesian-Information-Gap Decision Theory, *International Journal of Greenhouse Gas Control,* 49: 73–80.

Abstract Care must be taken when choosing a site for geological CO2 sequestration to ensure that the CO2 remains sequestered for many years, and that the environment is not harmed. Making a decision between sites for sequestration is not without its challenges because, as in the case of many subsurface problems, there are a lot of uncertainties. A method for making decisions under various types and severities of uncertainties, Bayesian-Information-Gap Decision Theory (BIG DT), is coupled with a numerical multiphase flow model for CO2 injection. The framework is used to make a decision between two CO2 sequestration sites; data are collected during a test injection and are used by the framework to assess the robustness of each site against failure by either leakage or induced seismic activity. A discussion of how the data are used to decide on a site follows. The results show that at the two synthetic sites examined here, the one with the less leakage potential is preferred. This indicates that the potential for leakage is more prone to violate decision goals at these sites than the potential for overpressurization.