

	Critical Processes & Parameters	Knowledge Gaps
Geological	<ul style="list-style-type: none"> •Knowing how to extrapolate •Understanding heterogeneity distribution and scale •...But well developed processes and methods from O&G industry, sedimentology etc... •Focus on fluid flow properties 	<ul style="list-style-type: none"> •Rock physics linked to seismic •Regional scale models using reservoir scale tools •Revision of models & •Full suite of several cases
Multi Phase Flow	<ul style="list-style-type: none"> •Must have good understanding of mixed gases •Salinity and temperature are critical •Skilled res engineer to know how parameters impact results 	<ul style="list-style-type: none"> •Rel perm curve for cap rocks? •3 Phase curves •End point saturation
Geochemistry (RTM)	<ul style="list-style-type: none"> •Reaction rates, surface areas, kinetics (press temp) •Near well bore in short term •Impacts on Seal integrity & capacity (mineral trapping) in long term 	<ul style="list-style-type: none"> •High uncertainty!! •Data base needed for various temps and Pressure scenarios •Cement chemistry? •Properties of high salinity & high temp reservoirs.

Geomechanic	<ul style="list-style-type: none"> •Existing and potential Fracturing, •initial state, insitu measurements, regional stress, •rock properties/strength •Being able to upscale core data to field scale •“Full Earth” models into overburden etc... 	<ul style="list-style-type: none"> •Uncertainty in fault properties •COUPLING!! •Costs of core and measurements •Geomechanical effects at the well bore – Damage effects in simulators
Thermics	<ul style="list-style-type: none"> •Temperature data: Initial uncontaminated measurements •Regional gradients 	<ul style="list-style-type: none"> •Deformation changes resulting from temp changes

CONCLUSIONS FOR ALL:

*All the above rely on “good data” using the “right” data, and skilled operator
 To fill the Gaps we need to have data from the field tests and R&D pilots **SHARING**