

## SEG workshop, WS-14, Stephen Cox, 21- 22 September, 2017

### DAY 1

8:30 - 9:00	Introduction
9:00 - 9:30	Forces and stresses in the Earth's crust
9:30 - 10:30	Fluid pressure states, permeability and the physics of fluid flow in fracture-controlled hydrothermal systems
10:30 - 11:00	MORNING TEA
11:00 - 11.30	<i>Practical Exercise 1: Calculation of fluid volumes and flow rates for hydrothermal systems</i>
11.30 - 12.15	Stress fields, fracture geometries, kinematics in fracture-controlled hydrothermal systems
12:15 - 13.45	LUNCH
13:45 - 15:00	Geometric and kinematic controls on failure, permeability enhancement and fluid pathways in fault zones
15:00 - 15:30	AFTERNOON TEA
15:30 - 16:00	Viscous deformation and permeability in shear zones
16:00 - 16:45	<i>Practical exercise 2: Determining shear sense in brittle faults and viscous shear zones</i>
16:45 - 17:30	<i>Practical exercise 3: Deposit-scale structural analysis and exploration targeting; discussion</i>

## DAY 2

8:30 - 9:20	Fold-related permeability enhancement
9:20 - 10:30	The mechanics of failure and permeability enhancement in high fluid flux regimes
10:30 - 11:00	MORNING TEA
11:10 - 12:00	Injection-driven failure: the seismogenic context for high fluid flux fault regimes
12:00 - 13:30	LUNCH
13:30 - 14:00	The dynamics of failure and permeability enhancement during injection-driven failure
14:00 - 15:00	<i>Practical exercise 4: Fluid pressures, stress states for failure, permeability enhancement and fault reactivation</i>
15:00 - 15:30	AFTERNOON TEA
15:30 - 15:45	Evolution of permeability distribution in faults during successive rupture sequences
15:45 - 17:15	<i>Practical exercise 5: Regional-scale targeting in fault systems</i>
17:15 - 17:30	Wrap-up and discussion

### Tools:

Participants should bring a calculator and notepaper to perform some simple arithmetic calculations.