

**Some questions for this workshop include:**

- 1) Does AdS/CFT furnish a complete description of quantum bulk physics? If so, how do we see this? If not, what bulk information is missing in the boundary theory?
- 2) What features are present in a consistent quantum theory of black hole evolution? Do horizons become singular, or are other nonlocal dynamics relevant?
- 3) What is the role of entanglement in producing emergent spacetime? What other structure is necessary to derive spacetime?
- 4) Do simplifying properties of perturbative amplitudes extend to properties governing nonperturbative amplitudes?
- 5) What are relevant gauge-invariant observables in quantum gravity, and how are they formulated?
- 6) How do we describe quantum cosmology and its observables, in a gauge-invariant theory of emergent spacetime?