- **A tale of two metals: How strong interactions can destroy an ordinary metal**
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  Band theory is one of the great successes of standard solid state physics. The failure of band theory became apparent in the 1940's when it was realized that because of strong interactions, half-filled-band materials that should have been metallic were instead insulators, so-called Mott insulators. In this talk, I will discuss the simplest model that embodies the physics of strong interactions, the one-band Hubbard model, and introduce Cluster Dynamical Mean-Field Theory with Continuous-Time Quantum Monte Carlo as a method to study this problem. The resulting phase diagram shows that the effect of strong-interactions, or of Mott physics if you want, extends far from half-filling. In particular, the phase diagram contains a first-order transition in the normal state. That transition separates a pseudogap phase from a correlated metallic state. The pseudogap does not break symmetry and does not come from precursor Cooper pairs. The pseudogap temperature follows the so-called Widom-line of the first order transition, a concept that I will explain. I will show that the phenomenology of the pseudogap and of superconductivity found for strong interactions is very close to that of hole-doped high-temperature superconductors.