Detecting Near-Extremal Binary Black Holes DANIEL HEMBERGER, California Institute of Technology, SXS COLLABORATION — There is an ongoing effort in the gravitational wave astronomy community to construct a template bank for Advanced LIGO that includes gravitational waveforms from binary black hole systems with high mass ratios and spins. Using numerical relativity simulations performed with the Spectral Einstein Code, we assess the prospects for detection and parameter estimation of binaries with spins above the expected template bank cutoff spin. This analysis is restricted to equal-mass, non-precessing binaries.