Effects of neutron-star dynamic tides on gravitational waveforms within the effective-one-body approach. TANJA HINDERER, Univ of Maryland-College Park, ANDREA TARACCHINI, AEI Potsdam, FRANCOIS FOUCART, UC Berkeley, ALESSANDRA BUONANNO, JAN STEINHOFF, AEI Potsdam, MATTHEW DUEZ, Univ of Washington. Extracting the unique information on ultradense nuclear matter from the gravitational waves emitted by merging neutron-star binaries requires robust theoretical models of the signal. I will discuss a novel effective-one-body waveform model that includes for the first time dynamic (instead of only adiabatic) tides of the neutron star and also describes the merger signal for neutron-star-black-hole binaries. We demonstrate the importance of the dynamic tides by comparing the predictions of this model against results from numerical relativity simulations. I will also show that the impact of the dynamical tidal effects can be approximately captured by a simple effective description that makes explicit the influence of the neutron star matter through two key parameters (for each multipole): tidal deformability and fundamental oscillation frequency.