Tropical polytopes are polytopes over the max-plus semiring. These turn out to be geometric objects which are even more purely combinatorial than our combinatorial friends, ordinary polytopes; we will present the current state of the theory, defining their faces and using them to construct cellular resolutions of monomial ideals. We will also be presenting a large number of either conjectures or theorems, depending on what happens between this abstract submission deadline and the conference itself. (Received March 01, 2006)