Mirror symmetry is a curious duality, first noticed by physicists and then excitedly embraced by mathematicians, between certain manifolds and their "mirror" spaces. This talk considers mirror symmetry on toric surfaces, which are varieties with certain convenient combinatorial properties and include many well-known surfaces. These surfaces are especially suited to being exploited by tropical geometry, which is a form of algebraic geometry over the "tropical semi-ring." This talk will discuss the generalization of mirror symmetry to all toric surfaces (expanded from just the Fano case) following the Gross-Siebert Program wherein singularities are added to the tropical picture in order to pull more curves into view.