**Acid and Base Strength**

 **A helpful way of viewing an acid – dissociation equilibrium is to realize that 2 bases (H2O and A-) are competing for protons:**

**HA (aq) + H2O (l) H3O+ (aq) + A- (aq)**

 **Remember anything that gains a proton (+) is an acid and anything that loses a proton (+) is a base (Bronsted-Lowry).**

 **If H2O is a stronger base than A-, the H2O molecules will get the protons and the solution will contain mainly H3O+ and A- ions.**

 **If A- is a stronger base than H2O, the A- ions will get the protons and the solution will contain mainly HA and H2O.**

 **When beginning with equal concentrations of reactants and products, the proton (s) is always transferred to the stronger base.**

 **This means that the direction of the reaction, to reach equilibrium, is proton transfer from the stronger acid to the stronger base to give the weaker acid and the weaker base.**

 **Stronger acid + Stronger base 🡪 Weaker acid + Weaker base.**

 **Strong Acid: is one that is almost completely dissociated in water and is therefore, a strong electrolyte.**

 **Thus, the acid – dissociation equilibrium of a strong acid lies nearly 100 % to the right and the solutions contain almost entirely H3O and A- ions.**

 **Weak Acid: is one that is only partially dissociated in water and is thus a weak electrolyte.**

 **In the cases of weak acids, the acid tends to not transfer protons and the acid – dissociation equilibrium lies essentially 100 % to the left.**