

>> Diane Jewell: Like dissolves like. Here you see the solvation of a polar molecule. In red what you're looking at is glucose. Glucose is C₆ H₁₂O₆. Glucose is a polar substance and the polarity comes from the fact that many of the carbons on this molecule are attached to an OH group. The oxygen, having the two non-bonding pairs of electrons tends to be very electronegative. And so each one of these oxygen exhibits a partial negative charge surrounding it. So, once you put glucose into water, water also being a polar substance will immediately surround each molecule. Now, it will surround it in such a way that the hydrogens will become a surrounding agent to the oxygen. So, you can see here this oxygen has hydrogen near it. This oxygen has hydrogen near it. Each one of those hydrogens are partially positively charged due to being attached again to an oxygen that is withdrawing electrons from the hydrogen. This makes for a very stable context. You see then dipole/dipole interactions between the oxygens on glucose and the hydrogens on water.