

JOANNE STUBBE: The morphological unit of life is the cell, whether you're a flea or you're an elephant. Right?

And we all have water as the major solvent. We all have the same biological molecules that play a major role inside our bodies, like sugar or fat, or amino acids, or nucleotides.

We all have the same ways of making reactions work fast enough so they can succeed inside the cell, and controlling the specificity, and they're conserved from bacteria to humans.

We all use the same vitamins on your vitamin bottle. And those are also conserved in general from bacteria to humans.

And we also all have the same major regulatory mechanisms, although as you go from prokaryotes to eukaryotes, things get more complex.

And so what we cover in the course is, in fact, most of the things we talk about are bacterial systems because they're better studied but can be extrapolated between the two systems.

So are these things ordered inside the cell? And how do you study them inside the cell? That's the major focus of a biochemist. You want to understand things at the molecular level, but then you need to understand what you see at the molecular level, how does that relate to what's going on inside the cell?

And so you need to go back and forth between inside the cell and understanding the chemical and physical principles by which all the reactions work.