

The way you can do it is using one of these interesting devices. These are DNA microarrays. They come in different flavors and forms. They're made with somewhat different technologies, by different companies and academic laboratories. I've picked one here that comes in a very nice package. This has a little sliver of glass, a little square of glass in which, in those little squares that you see on the slide there, each square has a different DNA sequence. There's a specific 25 letter DNA sequence in that square, a different 25 DNA letter sequence in that square, and a different one in that square, and a different one in that square. Every one of these has whatever DNA sequence you would like to specify. You could type them in and someone could make a DNA array that had different 25 letter sequences in it. How in the world could you do that? I suppose you could go to the chemical laboratory and synthesize the first one and then come and stick it down, and then synthesize the next one and stick it down, and the next one and stick it down. But actually the way they do this is to actually do it in parallel. They do it the same way that people make microprocessor chips in Silicon Valley. They have a mask, they shine a light on the glass, where the light shines the surface is de-protected, and you can wash on one of the DNA letters. You then re-protect the surface, shine a light through another mask, de-protect certain spots, and wash on the next letter. Shine a light through a mask, wash on another letter... After a hundred such masks you could build up an average of 25 specific letters at each spot depending whether on at each mask you had black or clear, you could either activate or not activate each spot and build up a specific sequence of DNA letters in each spot.