Scientists have now mapped the human genome - the next frontier is understanding human epigenomes; the ‘instructions’ which tell the DNA whether to make skin cells or blood cells or other body parts. Apart from a few exceptions, the DNA sequence of an organism is the same whatever cell is considered. So why are the blood, nerve, skin and muscle cells so different and what mechanism is employed to create this difference? The answer lies in epigenetics. If we compare the genome sequence to text, the epigenome is the punctuation and shows how the DNA should be read. Advances in DNA sequencing in the last five years have allowed large amounts of DNA sequence data to be compiled. For every single reference human genome, there will be literally hundreds of reference epigenomes, and their analysis could occupy biologists, bioinformaticians and biostatisticians for some time to come.