Epigenetics model

Epigenetics is the study of modifications to DNA that promote changes in gene expression without altering the DNA sequence. The activity of our genes is determined by more than their DNA sequence alone. Active and silent genes are distinguished by epigenetic marks – chemical tags that are added to the DNA or to the proteins around which the DNA is organised on chromosomes.

<http://www.babraham.ac.uk/our-research/epigenetics>

Epigenetic marks play important roles in defining different cell types in the body and can be influenced by environmental and nutritional factors. All cells in the body are derived from stem cells, which have the unique ability of being able to give rise to any cell type.

Epigenetics is now in the A Level curriculum in the UK and both teachers and students are taking more interest in the work of the Babraham Institute – a world leader in the subject. Our scientists have several different ways of explaining epigenetics to a non-scientific audience – as a book which has some chapters locked until they are required, as a wardrobe which only allows a few clothes to be taken out at a time or as a road system which has some routes closed off and others open for traffic. There are many models of the DNA molecule available, but none of them explains epigenetics.

***Your challenge: Create a resource to explain epigenetics to a non-scientific audience.***

***A presentation and or printed resource should accompany an interactive model – perhaps of the DNA molecule – which shows how epigenetic marks affect the function of the DNA without changing its sequence.***

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