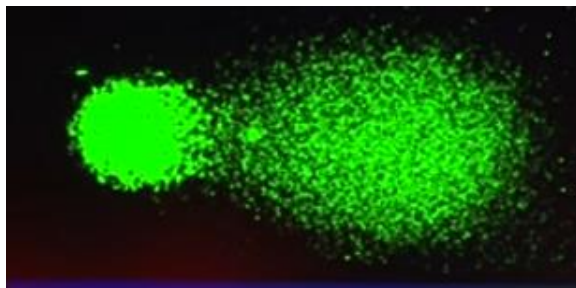
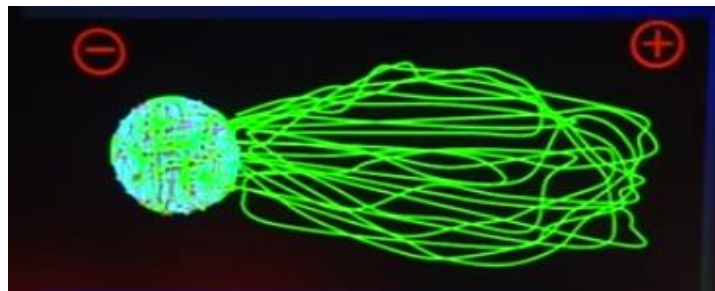
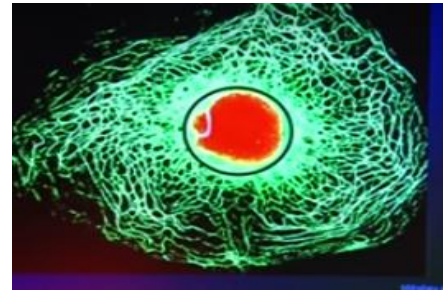


11:30 – 13:07 Milena Georgieva

The epigenetics is the real genie in our genes. It controls the way they work. I'm a molecular biologist ... we try to study how different factors and conditions are influencing our genome and epigenome.

This is a human cell, and this is the place where DNA sits. What we observe in our laboratory is how this DNA is influenced by different stress conditions. These different stress conditions can be UV radiation; it can be different foods; substitutes; it can be drugs, whatever. And if we put this cell under a mild electric field, what we see is that when DNA is damaged, DNA is extended toward the anode (positive sign on right). This forms a comet-like image which is observed under a microscope.



This is a cell, and it has a lot of DNA damage. This tail (pointing to right side) tells us there is a lot of DNA damage in this cell. There are methods for quantifying these results and they tell us how to treat our DNA in order to be healthy, and in order to manage in different stress conditions.

Some of our results deal with food colorings and food additives and preservatives that we regularly use in our daily practice. We have tested a lot of them, but I am going to give you the results with some food colorants, like Fast Green, Indigo Carmine, and Erythrosine (Green 3, Blue 2, Red 3). This one gives the green color, this one gives the blue color, and this one gives the red color of our sweets. And when we treat healthy cells with these three colorants, what we observe is extensive DNA damage, which means we should be very careful when we use them in our daily practice.

