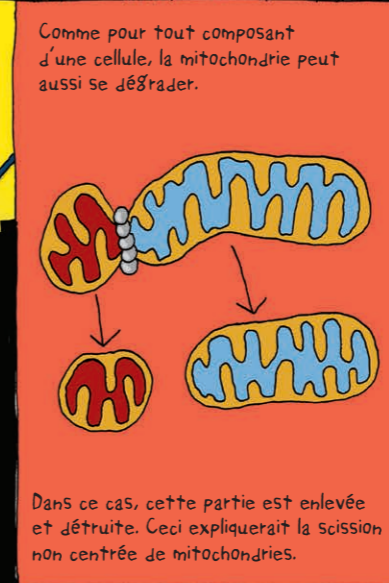
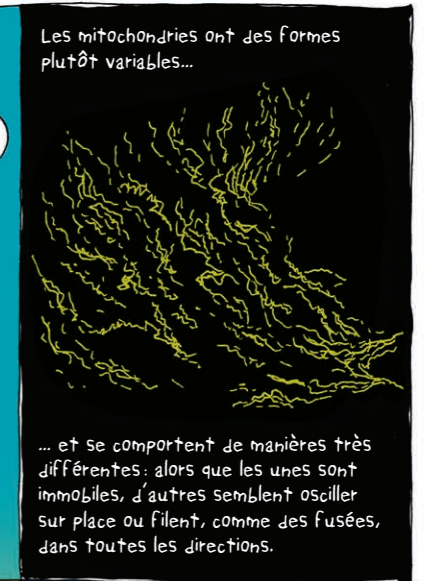
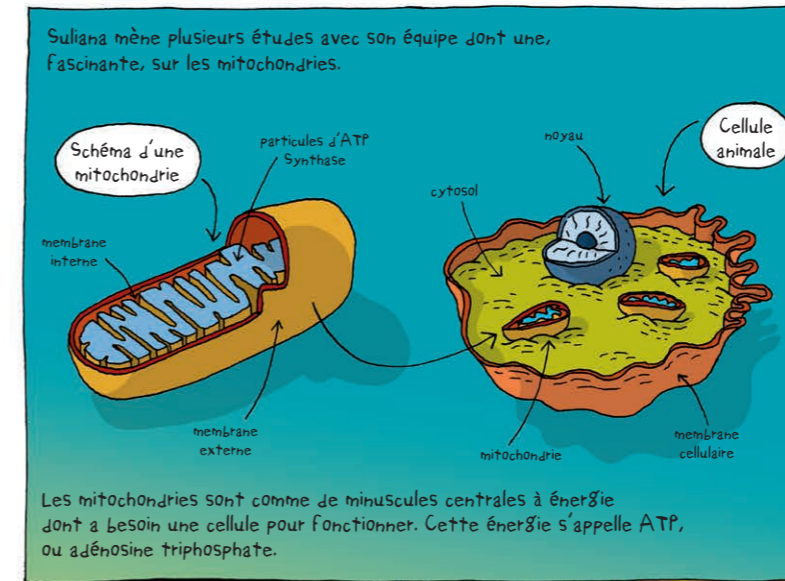
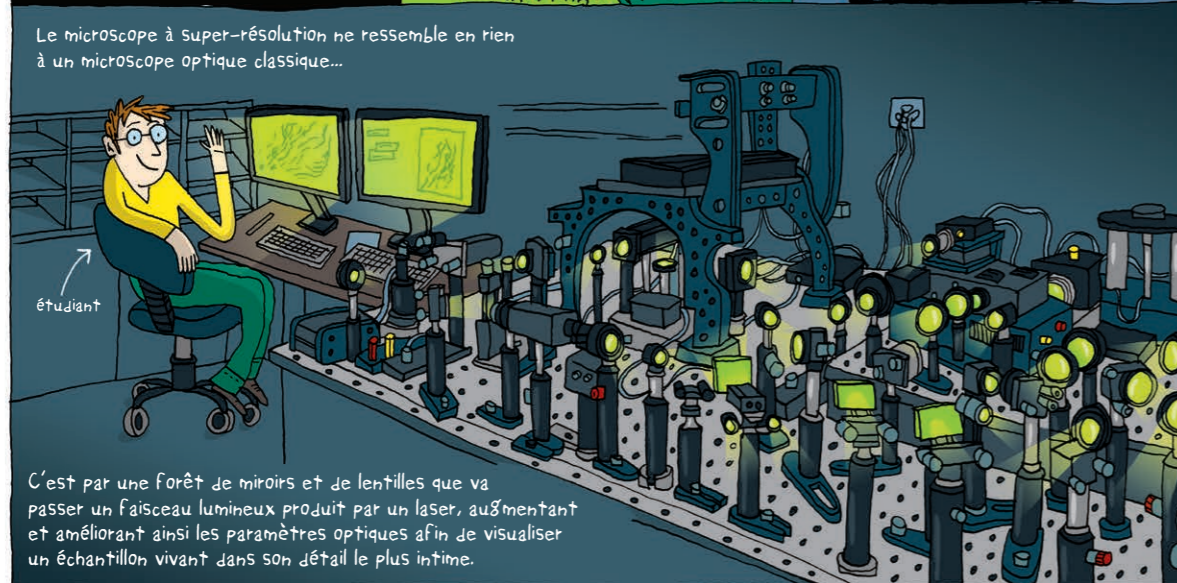
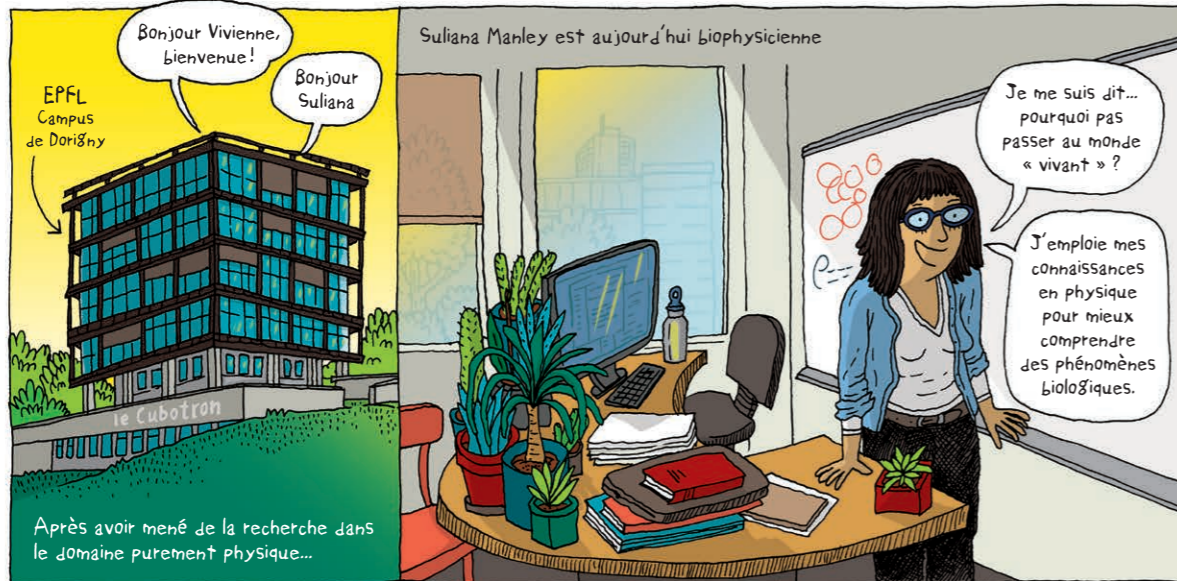


AU LABORATOIRE DE BIOPHYSIQUE EXPÉRIMENTALE  
LA BIOPHYSICIENNE SULIANA MANLEY EXPLORE LE MONDE DES MITOCHONDRIES



LABORATORY OF EXPERIMENTAL BIOPHYSICS  
BIOPHYSICIST SULIANA MANLEY LOOKS DEEPER INTO MITOCHONDRIA



After several years of research in the field of physics...

Suliana and her team develop super-resolution light microscopes. She takes me down to the basement to see one.



\*On an average, a cell measures about 0.01 to 0.10mm and can contain up to 42 million proteins

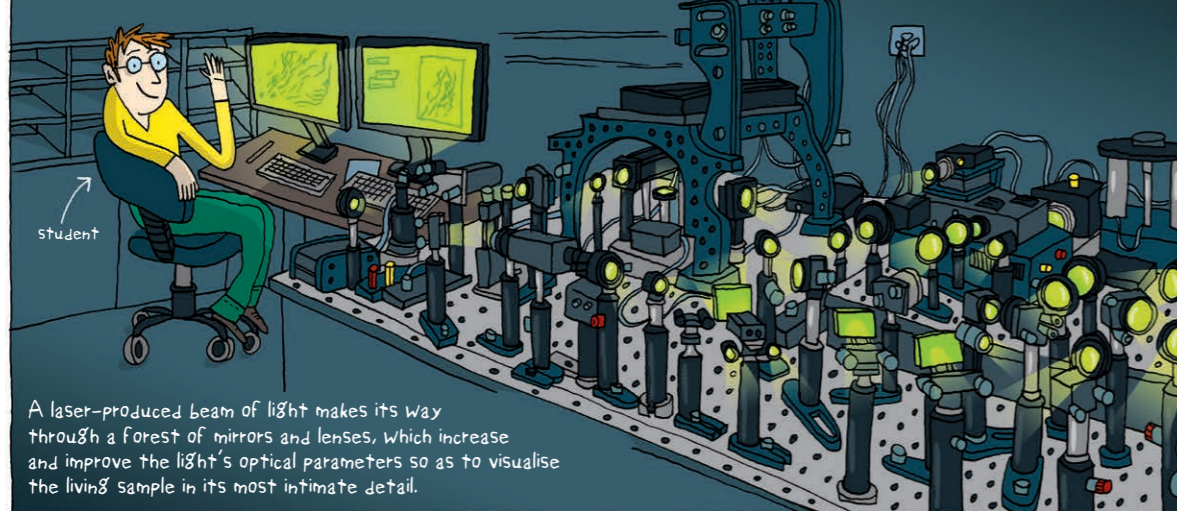
Suliana's microscope is a light microscope.



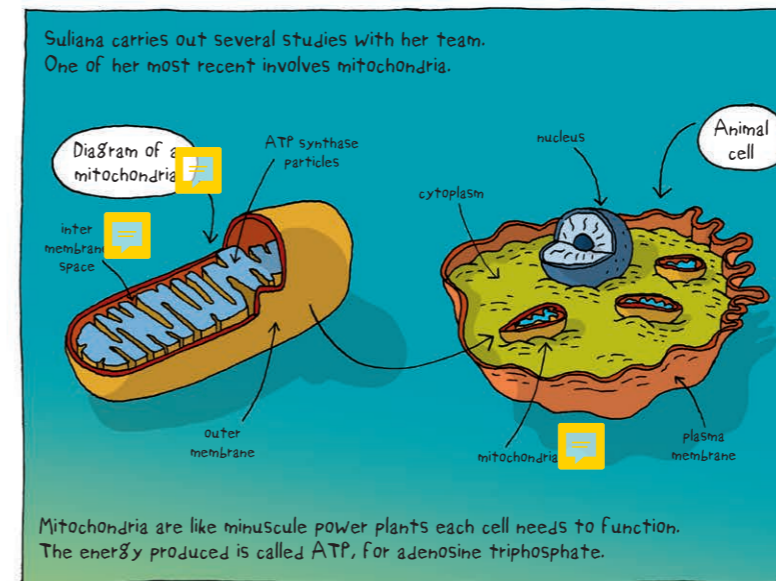
Suliana opens a door leading into a dark room.



The team's super-resolution microscope bears no resemblance to a classical light microscope...



A laser-produced beam of light makes its way through a forest of mirrors and lenses, which increase and improve the light's optical parameters so as to visualise the living sample in its most intimate detail.



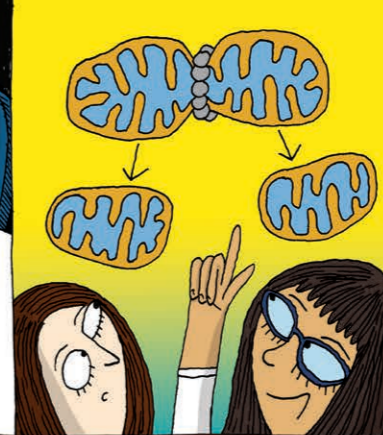
Mitochondria are like minuscule power plants each cell needs to function. The energy produced is called ATP, for adenosine triphosphate.

Mitochondria come in all shapes and sizes...  
... and behave very differently: some don't move while others oscillate on the spot or suddenly shoot off like rockets

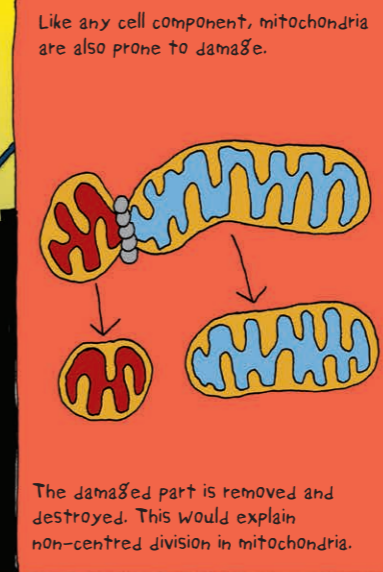
Mitochondria literally use highways to move around! These highways are made out of protein and are part of the cell's cytoskeleton.



Mitochondria divide to increase in number. A sort of ring (made of protein) forms, where a mitochondrion is going to split, and then gradually tightens until division is completed.



Our microscope shows us images of mitochondria that don't always divide into two exact halves.



The damaged part is removed and destroyed. This would explain non-centred division in mitochondria.



Questions that Suliana's microscope will no doubt help to answer.