

### **1)What would you suggest to teenagers who would like to study neuroscience?**

Before going to the university, teenagers interested by neurosciences can read magazines that explain scientific research to wide audience. Editors release 1-2 issues per year dedicated to neuroscience. In France I would recommend "Sciences et Avenir" for example. I am not a fan of videos on internet because they nearly all contain mistakes. Interviews of researchers working in neuroscience are often very interesting. To get them you have to go to the web site of universities or neuroscience laboratories. There are also good TED talks on the subject of neuroscience.

### **2)What's the most interesting thing you have discovered?**

I would say two.

1. When studying the mechanisms of action of deep brain stimulation (used for example for alleviating Parkinson disease motor signs) I discovered that this stimulation at high frequency (100 Hz and above) produces a functional disconnection of the stimulated nucleus: the stimulated nucleus no longer sends pathological rhythms to its target nuclei and is no longer activated by its afferences
2. Recently I showed with my team that Parkinson disease is not only due to dysfunction and degeneration of midbrain dopaminergic neurons but also to dysfunction of GABAergic neurons. Reversing dysfunction of GABAergic signals restores some aspects of motricity.

### **3)Why did you decide to work on Parkinson disease?**

This is by chance. I began my research in a lab interested in this subject. I did my thesis on the function of the subthalamic nucleus which was discovered later (when I was working on a different subject) to be noxious in Parkinson disease. This nucleus is the one stimulated at high frequency as I explained above.

After ten years on this subject I decided to explore other questions and in particular the intrinsic rhythms of neurons or glandular cells. But as my preferred subject was dysfunction of neurons in Parkinson disease I went back to this subject 15 years ago.

### **4)How much have you improved since you started working on this?**

I improved my understanding of the disease not only because of my research but mainly thanks to the research of other teams in the world. Techniques have also improved so much that they allow elucidating questions that we could not even ask when I began my research.

### **5)When did you decide to be a neuroscientist?**

One of my professor at the university pointed out to me that I was always choosing subjects of neuroscience which I was unaware of. She then asked me if I would like to do a thesis in this domain in the lab of her husband. Once in the lab I fell in love with research.

### **6)What has been the biggest problem of neuroscience you have seen?**

Difficult question that I am not sure to understand. I would say pain: how does a sensation (nociception) become pain in the brain? How does the loss of the loved person becomes a deep pain?