ANNEX III

DR. JENS HJERLING-LEFFLER - PERSONAL INTERVIEW

1. Dr. Hjerling-Leffler, you studied Mathematics, Natural sciences and the PhD in Medical Biochemistry. Have you always been interested in science?

Actually yes, I learned to read trying to study the names of beetle species from an entymology book as a 4 year old. Although biology always has been closest to my heart I was as most kids interested in astronomy and dinosaurs as well. I did not know however to call it "science" until much later.

2. Your postdoctoral research was done in University College London and New York University. Do you recommend scientific stays abroad?

Absolutely, I think mobility between different labs is a key factor for the development of an independent scientific mind. Going abroad also exposes you to different funding and scientific cultures allowing you to build your own model of how to do science.

3. You are beneficiary of a Marie Curie Career Integration Grant. How important is the European funding in the scientific career development?

I think the ERC has been really great for European science in offering attractive funding for scientists at an early career stage. The Marie Curie CIG, although much less money, is great to have in a newly started lab since it is unbudgeted money for several years.

4. As a scientist, you are interested in the genetic and cellular mechanisms of the development and function of the brain's inhibitory system. What great question would you like to solve?

I am particularly interested in the late or adolescent maturation of neural circuits when the network goes from a more plastic entity to a more specialized highly functioning operator. I would like to understand what are the necessary changes on a cellular level and ultimately what drives this change –is it an internal "clock" or an coordinated response to cues outside of the brain?

5. Regarding the neural diversity, you research in cell connectivity and activation or silencing. Do you consider that this approach may have clinical applications?

I do, with the birth of forward engineered "pharmacogenetics", i.e. the ability to give specific cell types sensitivity to a otherwise inert drug, I think it is imperative to start understanding the role of individual neuronal classes. The work in model systems will be highly relevant if/when we will be able to dial the activity of specific neuronal classes up or down in patients.

6. You mentioned in a conference that "the brain is plastic and will adapt to changes". Is the adult brain a mature organ or is in constant evolution?

I actually think it is, as compared to earlier (pre-adolescent) stages, a "mature" organ –at least on a transcriptional level. Of course there is still plasticity (as shown by our ability to learn and change our behavior also as adults) but perhaps this has less dimensions than in the young

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brain. I however think that it will be possible to artificially re-introduce more kinds of plasticity as part of treatment strategies.

7. Your lab is studying the cellular changes that occur around sexual maturation and the genetic programs that control these changes. Do teenagers have different genetic mechanisms than adults?

Definitely there are differences in neuronal gene-expression –whether the genetic mechanisms underlying these differences are age-specific is a main interest of our research.

8. "Cell types in the mouse cortex and hippocampus revealed by single-cell RNA-seq. Amit Zeisel and Ana B. Muñoz Manchado et al." is your recently published paper in Science Magazine. Are there any secrets to be an author in high impact journals?

No real secrets. Many areas of neuroscience today are very technique-driven and if you happen to be in a sub-field where the latest development aids your research (in my case cell type identity and single-cell sequencing) being an early adopter gets you a long way in terms of interest from high-impact journals. While I recognize the advantages in the ability to raise money etc that comes from high impact publications, to me creating solid new and/or game-changing knowledge in biology and putting it into a relevant context is more important long-term.

9. The Department of Neuroscience offers an international environment that brings together faculty with different expertise to study the nervous system. Is direct relationship among professionals from different backgrounds simple, or do they speak different languages?

With regards to nationalities and actual languages I think interactions between professionals is not much a problem since we all do speak the language of science. My department is the Department of Medical Biochemistry and Biophysics which is extremely diverse with regards to both areas of research as well as technologies used –this constitutes a bit of a challenge when it comes to discussing individual projects but is a strength on designing the overall research goals for a group or a division.

10. In addition to sustained funding, what are the main research challenges in coming years?

I think that an overly zealous approach to regulation and administration is putting a break on Science in Europe – large amounts of funding and effort goes into overseeing (and sometimes slowing down) science rather than to the science itself. This means that even to sustain funding total spending needs to increase. I also think the increased use of different genetic strains for whole animal models in neuroscience creates the need to be able to move animals between universities and research groups faster and easier. It seems to me that the latest development in national and European regulations are rather taking us in the opposite direction.

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SEVENTH FRAMEWORK PROGRAMME

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