Interview: Frank Grosveld – Professor of Molecular Biology, Erasmus MC, The Netherlands

16.10.2015

Tags: Pharma, pharmaceuticals, the Netherlands, gene regulation, interactomics, genome architecture, molecular biology, innovation, government relations, research

Frank Grosveld, Professor of Molecular Biology at Erasmus Medical Center, tells PharmaBoardroom about how Dutch research and development environment has evolved over recent decades.

Frank, to begin could you please introduce yourself to our readers around the world, with reference to your current research interests and educational responsibilities?

I am a professor of cell biology but most of my focus is on molecular biology. My special focus is on gene regulation and interactions that take place in the genome, *interactomics*. Most of my research is on genome architecture, transcription factors, and proteins that bind to chromatin in the context of hematopoiesis (blood formation). In addition to my research, I also teach graduate level students at the Erasmus University. Through my work at Erasmus University, I work with a number of start-up companies as well, especially Harbour Antibodies, but my research mainly focuses on basic sciences.

Looking at the Dutch sciences ecosystem – how important do you feel EU funding is towards Dutch scientific initiatives?

The Dutch government has cut funding dramatically and this in turn has harmed research in the Netherlands significantly. We now see that the Netherlands relies heavily on the EU for funding.

The Dutch system is currently failing us, but, luckily as of now, we are still receiving funding from initiatives and investments that were made in the past, although this will not hold for much longer. Output has decreased considerably and will hinder the future of science and research in the Netherlands. Scientific innovation is normally behind economic output. Perhaps in the future funding will improve again, but there are as of yet no signs of improvement.

Many of these cuts have been related to basic science. This is a huge mistake, as we need to ensure that we protect the innovation pipeline. Most of the greatest innovative discoveries and findings tend to come unplanned, as you simply cannot put predictions on creativity. Politicians and managers find this very difficult to accept. In research, elements are constantly changing and you will most definitely not end up doing your planned initiative five years down the road. If you are working exactly down a path where you actually did everything as planned five years ago, something is usually terribly wrong.

What does this mean in terms of the fight for human capital, and the relationship between Dutch researchers and scientific institutions?

A lot of people are migrating and leaving the Netherlands, and people not coming back from their postdoctoral training elsewhere. We also have noticed that many of our youth choose not to enter into science related fields. As one example, our department (cell biology) has significantly shrunk in size, just as have many university departments in the areas of life sciences and medicine.

In addition to innovation, the pharmaceutical and life sciences industry serve as an important economic factor for the Netherlands in the sense that one biotech job creates three more jobs for the country. A city like Rotterdam in the Netherlands needs to look for employment intensive economic activities, and there should be more awareness of the value added aspect of the life sciences at the political level in order to stimulate this aspect of (local) economic activity.

Given your impact and your progress in translating basic science into applied results, how would you assess the Dutch infrastructure for R&D, in comparison to some other markets that you have worked in – for example the UK and Canada?

The climate for entrepreneurial activities are much better in the United States than in the Netherlands. The can-do attitude and access to funding for innovation make a great difference. A further disadvantage in the Netherlands is that the research community is much smaller, which means that there is a smaller circle of experts and fewer individuals responsible for funding. In addition, the United States has a fundamentally different system than the Netherlands or Europe in general. We see this in how talent is recruited. The US system pays a high price for talent but is

also willing to rid itself quickly of talent that does not produce. In Europe, our views are very different and instead we try to nurture talent for much longer periods of time. Nevertheless, the Netherlands has changed significantly compared to what it was 30 years ago in that there is a much more monitoring of performance, while the Dutch system has changed very much from a society relying on trust to one with a great amount of distrust. This also filters through to our area of work often instigated by the government, leading to much more completely unnecessary bureaucracy.

Since we see that resources in the Netherlands are limited at the moment, what are some of the underlying strengths and variables in the Dutch research community that you believe will survive in terms of scientific expertise?

Breaking down a system is always much easier to do than building a new one. The most dramatic example is Germany, a national that led the way in innovation before WWII but disappeared completely off the map following the war. It has taken the German scientific community a very long time to build themselves back up after so many years. As such, if we break down our scientific enterprise too much, it will take an enormous amount of effort and time to rebuild our excellent position in science. Most politicians in this country see education as a cost rather than as an investment, and for a knowledge based economy it is necessary for us to invest in knowledge. The quality of education in the country is at a high level but this is something that should be constantly monitored and cannot be neglected. There are many countries around the world that have poured a lot of active investment into their education system, and this is something the Dutch can learn from. The other advantage was that the Dutch have the good habit of working very well together in collaborations; it is part of our culture, but the budget cuts from the government undermine this collaborative spirit.

In terms of actual scientific knowledge within the pharmaceutical and biotech space, in your expert opinion, what would you consider to be the Dutch area of expertise in terms of technology and life sciences?

On the start-up level, the Netherlands has become strong especially in areas such as immunology. A major loss for the Netherlands was that of Organon for the benefit of its shareholders, while the Netherlands lost a major pawn in our pharmaceutical industry. Big private companies such as Organon receive a lot of their talent from universities and the private public relationship was always very important. Luckily we host a number of successful start-ups and small to medium size companies, but we no longer have a significant Dutch player in the life sciences market.

At this point, do you think the country – the educational system, the university systems and the government – sees the life sciences industry as a strategic direction for the countries future?

In the past, the life sciences industry was a strategic direction, but at the moment the country is not looking after this sector very well due to a lack of funding. Politically we are not very strong, and the research component has been not been good enough in lobbying its cause. In this aspect, we need to find good people that could spread this message and effectively lobby for our cause.

As a preeminent researcher in your field, a member of the Royal Netherlands Academy of Arts and Sciences, and have won several prizes in the UK and Netherlands throughout your career for innovation in medicine. What is your personal responsibility to advocate the importance of research in medicine?

Typically the process that I personally follow includes getting in touch with politicians directly to get the message across. For example I hope to directly get in touch with one of the responsible Minster to discuss animal experiments. Life for the research community is again being made impossible due to the restrictions and barriers that have been put in place with respect to animal based experiments. The research community has been given a very hard time and needs certain barriers to be relieved to be able to progress.

If we look forward to the next 10 years, what is the best thing and direction that could happen for Dutch life sciences?

There is a lot of potential for the Netherlands, but the need to stimulate young minds and reduce the gap between the need for more research and talent should be our first priority. Currently there is not enough interested young talent, so this urgently needs to be fostered; I would like to see more talented young people returning to research in the next 10 years.

What is some of the advice that you would give to young talent that has already entered in the life sciences industry?

Erasmus Medical Center and the universities of the country should be a place for young talent to develop their ideas and minds. Unfortunately, we see too much focus on numbers and output rather than the quality and originality of the work that is being done. Creativity is key in fostering innovation and a long term future for economic development. However, creativity cannot be forced through simply measuring the quantity of papers and publications that are being produced.

Click here to read more articles and interviews from the Netherlands, and to download the latest free pharma report on the country.

See more interviews