

Interview with Alice Dautry, President, Institut Pasteur



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How would you define the Institut Pasteur's relationship with the pharmaceutical industry and how it has evolved in recent years?

Since its foundation 120 years ago, the Institut Pasteur has had a close relationship with the pharmaceutical industry. I would even say this relationship is in the institute's own genes. It's interesting to remember that the main discoveries made by Pasteur were made when he tried to answer questions that were asked by small companies – at that time there were not so many big players.

Naturally, in the 21st century this collaboration takes a different form. Initially the Institut Pasteur was doing its own applications and production, but we stopped producing anything a few decades ago and engaged in a more formal relation with the pharmaceutical industry. On the one hand there have been collaborations in R&D and a close relationship with many companies for a number of years and on the other hand we also started creating biotech companies.

The first biotech company was created by Jacques Monod. In the 1970s it was not called a biotech, but this company became known as Institut Pasteur Production, which after many purchases and fusions became Sanofi-Pasteur. This company bears the name Pasteur but is not run or owned in any way by the Institut Pasteur.

More recently we created 14 biotechs and we are continuing to create small biotechs. Hence, the Institut Pasteur's relationship with the industry is on the one hand with the big companies in a R&D and on a contract basis; while on the other hand we create biotechs on the basis of patents and discoveries made from within the Institut. As a principle, we create biotechs only with the

discoveries made here and when there is a scientist or somebody who wants to take over the technology we deliver it.

In terms of collaborations with bigger players, the Institut Pasteur has had very important partnerships, for example, last year with sanofi-aventis, GSK – for vaccine development –, and very recently we signed an agreement with Merieux Alliance. We are also in talks with Novartis and Roche to develop more R&D.

The Institut Pasteur is also close to the industry through licensing agreements. For instance, a prominent example was the discovery of the HIV virus, which led to the diagnosis of HIV I and HIV II viruses. Hence, we have patents and licensing to all companies conducting HIV diagnosis worldwide.

Recently, in order to facilitate the creation of start-up companies, we signed an agreement with a fund called Kurma Biofund that is going to support the creation of start-up companies from very early stages and accompany the exit from the lab to the creation of the start-up company. This is often a fragile moment when the discovery is still in the lab and before you can really create a start up and get money from investors. This is why we now have this new project in order to encourage scientists to take the missing step from the lab to the market before the start-up is created. There are now at least two projects that will be implemented under this new tool very soon.

Even though France is a leader in R&D, many in the industry complain of the lack of integration between local research and academic institutes and the pharmaceutical industry. In order to nurture public and private partnerships, some reforms have been made from the public side. Do you believe France is advancing in this area?

I truly believe the overall scenario is changing. I've been leading the Institut Pasteur for the last 5 years and I've seen the improvements in this period. I'm convinced that in order to improve this you need all stakeholders to work together. There are indeed some misunderstandings between scientists, academic researchers and the industry. On all sides there are concerns about working with each other.

All attempts of putting these stakeholders together are positive and I think these partnerships are improving. For instance, the Carnot project is very important in trying to build this bridge; it is focused on infectious diseases, which make up for half of Institut Pasteur's activities. The other half is on biomedical research, where the Institut Pasteur is very strong in neurology and developmental biology with some focus on muscles, also conducting important research in cancer and structural biology.

The priority of the Institut Pasteur is, through its research, to facilitate the transition from our labs to the industry and this is working very well. It is only by doing so that we will continue to replicate

successes such as the HIV breakthrough 25 years ago.

In this line, there are a series of things our institute can do to nurture and prepare for the upcoming breakthroughs. First, we get ones of the best scientists worldwide and put them together in a unique, stimulating, intellectual and technical environment. All of our recruitment is done by international calls – we recruit regularly scientists in a very open way from all over the world.

Just to give you an example, in the last few years we have recruited several groups where, on average, half are foreigners – our aim is to get the best people no matter where they come from. Then, of course, we have a very rich and dynamic environment with a number of seminars and conferences in order to build networks and create an extremely intellectual stimulating environment.

The Institut Pasteur also nurtures a cutting-edge technological setting where we try to open core facilities with the best technologies available open to everybody in the institute and to all our collaborators. This is a key to maintain our researches in the technological frontiers and spread their knowledge and expertise quickly inside and outside the institute.

We think that multidisciplinary and quantitative biology are going to be increasingly important; therefore, we are building new facilities next-door where we will try to recruit people that are more multidisciplinary and have a wide background in areas such as physics, mathematics and informatics. Discoveries in very different fields will reach the borders of their disciplines and impact life sciences. Hence, the Institut Pasteur needs to have people of different backgrounds to bring the latest developments to our programs.

Considering we never know where the next breakthroughs will come from, my aim is to create all the conditions to make it happen here at the Institut Pasteur.

This innovative and stimulating environment seems to be in place for decades, positioning the Institut Pasteur as an unquestionable international leader in a number of key health areas. However, the challenge from now on will be to maintain the Institut Pasteur's leading position in innovation. How are you planning to do so?

I agree that the biggest issue now is how to keep the institute at the highest level. If you look at impact factors of publications our institute, in terms of infectious diseases, is usually the second worldwide after Harvard University; we are first in European immunology. There was a recent study done in France about all local research institutions and the Institut Pasteur ranked higher than any other French institute.

Our challenge is actually to continue at the top. This is not easy considering that in France financing is still a big challenge. Another feature that is rather unique about the Institut Pasteur in France is that we are a private non-profit foundation. We are at the same time independent and

inter-dependent with a very good relationship with the government and many local universities and research institutes— what actually facilitates the relationships with all partners and helps the Institut Pasteur maintain its leadership in infectious diseases and biomedical fields not only in France but worldwide.

Since you started to lead the Institut Pasteur five years ago it has experienced important changes. For the next five years, what are your main ambitions and expectations for the Institut Pasteur?

Unfortunately, I am sure from now on humanity will face a new emerging disease almost every year. This is obvious because the changes of environment and conditions of life are creating all the conditions for new diseases to emerge at least once a year, somewhere. What's worse, some of them will spread worldwide very quickly.

Therefore, my main ambition for the next five years is that we get ready to react much faster to possible diseases than what we already do. My hope is that when new problems arise we can answer quickly with our experience, expertise and research. In terms of infectious diseases the Institut Pasteur covers everything and, thanks to our international network and relationship, we can have a surveillance view of what's going on with a general platform all over the world at the same time.

In the end of the day, all major experts know each other, so with the right tools they can work together to give quick answers to problems that may arise. For instance, the Institut Pasteur is investing considerable amounts of resources in antibiotics resistance all over the world so we are aware of what's happening and how we can bring more innovation for the society in general.

This affects important areas such as malaria, where resistance to drugs is not the same in Asia, Africa or South America. By doing a worldwide research, we have a clear general view and, at the same time, we can take lessons from one place to the other.

This is why basic and multidisciplinary research are growing areas in our institute. The Institut Pasteur's global and on-the-field presence allows us to know what's really happening with patients, take data to the lab and answer problems with cutting-edge research in record time. To keep developing this capacity is my main goal for the coming years.

What will be your final message to the readers of Pharmaceutical Executive in France and worldwide?

The health problems humanity is facing – which are directly connected to the development and economics of the world – are now completely globalized. There is not a single problem that is not global. This is why I don't think that any actor in the world – public or private – can solve any real health threats by itself. My message would be that public and private, pharmaceutical and

academic partners, must unite forces to solve the health questions that will continue to arise in the coming years.

It's only by doing so that we will solve local and regional problems that, if not solved quickly, will become global. This is why the Institut Pasteur is trying hard to open up itself in France and worldwide to work with the pharmaceutical industry, NGOs, and local governments. The Institut Pasteur has international activities for more than a century despite wars, revolutions, decolonization and we will continue to do so in order to do our job properly. We invite all stakeholders to do the same and work with us to try to solve – and succeed – the increased health threats humanity will face in the future.

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