

Stewart Cole - President, Institut Pasteur, France



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Stewart Cole, president of Institut Pasteur, speaks out about his aspirations as the first foreign president of the institute and the main themes of the new strategic plan.

The Institut Pasteur is celebrating its 130th anniversary this year. Which proactive steps are you taking to ensure that the institution remains relevant and fit for purpose in confronting the health challenges of the 21st century?

When I interviewed for this position, I had a good plan for restructuring since I thought that the operations of Institut Pasteur were becoming too dispersed. It was important to revert to its central mission, which is research with direct or indirect relevance to human health. I identified a number of research topics, which are central to this ambition and that are now being implemented in our strategic plan for 2019-2023.

The plan is based around three main axes. The first strand concerns countering new forms of infectious disease such as Ebola or the Zika virus infection, the so-called emerging infectious diseases. We have some 60 work-groups that are collaborating with one another to this effect. The second axis is around the field of anti-microbial resistance – AMR, which is, of course, a growing global concern, and is featuring prominently on the international policy-making agenda right now. On AMR, we have approximately 45 groups dedicated to exploring fields ranging from epidemiology to resistance mechanisms to drug discovery. France possesses some iconic pharma

companies that are highly engaged in this area, so we feel we can make an important contribution, both in terms of furthering the science and also the translational aspects.

The third area, which we are focusing on, is neurodegenerative diseases and other conditions related to brain connectivity. There are two reasons why I have defined this as an area of priority. Institut Pasteur can lay claim to a strong department of neurosciences, with world-leading experts in different areas, such as autism. We are looking to build upon this expertise and react to the growing concerns in France and elsewhere about neuro-degenerative diseases that are becoming ever more prevalent such as Parkinson's, Alzheimer's and even depression. After all the Institut Pasteur's historic mission has always been to respond to the most pressing health needs of society. We have been very successful in doing that in the past, having discovered the HIV virus, developed diagnostic tests for HIV/AIDS and also developed the Hepatitis B vaccine, which saved millions of lives. We are therefore resolute in our ambition to keep up this rich tradition.

What would you describe as your biggest achievements during your first year as president at Institut Pasteur and what have been the main challenges thus far?

Our immediate challenge is to get the strategic plan approved by the different governance bodies of Institut Pasteur. Recruitment is also a central aspect too as we set up a new research program; however, this will not be before 2020.

The inauguration of our "Omics" building, which focuses on the generation, analysis and integration of biological, clinical, genomic and environmental data, in September 2018 has certainly been a big achievement that happened on my watch. While emerging digital technologies generate lots of data, our job is to transform that raw data into information and then to convert the findings into knowledge. This is a field in which Institut Pasteur has always excelled. Today, many hypotheses are created via looking at large bodies of data, so the ability to amass and analyze these data sets is critically important. We hope, for instance, that exploring large databases of viral genome sequences could provide us with new leads in vaccine development.

We have thus made significant developments in IT infrastructure: for example, creating massive computational and storage capacities, as these are essential for driving research further.

Technological investments are incredibly costly but critically important as they underpin the science addressing current biomedical problems.

How would you describe the strategy of expanding the geographic reach of the institute, considering that traditionally you did not have much presence in the Middle East and the US?

The international network of Institut Pasteur has 32 members in 26 countries with a total workforce of 22,000. While six members boast very tight links with Paris, the others tend to be more embedded in the public health or educational systems of their respective countries. We have witnessed the creation of new institutions in middle-income countries e.g. South America and the Far East in the last 20 years. New institutions for education and training have opened in Montevideo, Shanghai and Hong Kong for instance. Nevertheless, we strive to avoid a top-down approach when pushing the boundaries of our overseas network, the initiative comes from potential new partners. It has to be noted that the Institut Pasteur network has always been very stable in its current form, with its strong humanitarian mission benefiting all countries in the network and beyond.

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How does it feel to spearhead an iconic French institution as a British citizen?

It is a big privilege for me to be the first foreign director of such a prestigious institution and I am immensely humbled. I think I have brought a more pragmatic approach to Institut Pasteur. Since I have lived in Germany, Switzerland and Sweden as well, I do have a strong multinational background, which fits well within the mission of Institut Pasteur. It is also reflective of the times we live in, where research has to be much more international and integrated. The leading research institutes attract people throughout the world because they want to work in the best places and this is very visible here in Paris at the Institut Pasteur. We have group leaders from all over the world and over 60 nationalities on campus.

What are your thoughts on Brexit? Could this be an opportunity for the French healthcare sector?

Brexit is a great tragedy for everyone and it is a concerning development for Britain and Europe in my opinion. It is, however, an opportunity for France, since the UK may find itself excluded in

certain areas. Much funding nowadays is around international programs especially EU-funded ones and the UK will not have as much influence as a third party compared to being a full member. In terms of science, we will still collaborate with our British partners, however, given the current uncertainty, these partnerships may become more difficult as time goes on.

You recently declared that academic research must take the place left by the pharmaceutical industry. What did you mean by that exactly?

We have changing dynamics today compared to the previous model of academic institutions taking research to a certain point and then looking for partners in industry. Nowadays, all countries have problems treating infections related to antimicrobial resistance, yet the pharma industry feels like this is not a profitable sector.

Academia, however, can help mitigate the risk and reduce the cost. We are very good at doing the discovery part but not in converting research into a product, since we do not have the processes and infrastructure necessary for product development. So, this is certainly an exciting opportunity because there is a lot of space to operate in which simply wasn't there before. It has to be noted that we gain much more when academic institutions and industry work together from the very early stages of a development project.

It is sad that in a country like France – a leader in discovering and developing vaccines – there is such a big backlash against scientific and medical achievements and traditions.

Can the resurgence of certain infectious diseases like measles in countries like France be linked to the lack of attention on these areas by pharma companies, because they do not see this sector as profitable enough?

The industry point of view is that vaccines are a one-off treatment. Moreover, society has become very suspicious about the activities of pharma companies and the huge profits some of them make. Personally, I do have a problem with companies making a massive profit from essential medications; however, I certainly do accept that they need to make profits in order to be able to develop new therapies. Finding the right balance is therefore very important. The best way to move forward is for the authorities to put in place appropriate incentive structures that encourage

industry to act in a way that is beneficial for society as a whole. Good behaviour needs to be rewarded and incentives aligned in such a way as to produce win-win outcomes.

On a different note, in France, there are many parents reluctant to vaccinate their children against childhood disease. The French Minister of Health Agnès Buzyn even made this compulsory recently, which demonstrates that some French parents don't seem to understand the importance of vaccination anymore. This is an important issue for us because we need to go back to the basics such as visiting schools to educate about vaccinations. It is sad that in a country like France – a leader in discovering and developing vaccines – there is such a big backlash against scientific and medical achievements and traditions.

A few words to conclude?

Since it was founded, the Institut Pasteur has had an interesting business model, heavily relying on public generosity and crowdfunding. 35 percent of our annual budget comes from donations and legacies, while another 45 percent derives from research and industry contracts and intellectual property revenues, and 20 percent from the state. So, we are very grateful to our donors since the donations really reflect the strong image and high esteem in which the Institut Pasteur is held by the French public.

However, we compete in a global marketplace and some of our competitors have endowments substantially bigger than ours, so we need to become more efficient and improve our endowment as well.

Running an institute, like the Institut Pasteur, is very expensive and we are also looking to renovate some of our buildings, since, despite their long tradition, they are no longer the right fit for modern science. We do not have the funds to build a brand-new estate, so we are looking to improve our facilities on our current five-hectare campus. It is important that we are always careful to align our ambitions with the realities of our resource base and to ensure that we are focusing our efforts in the areas where we can generate the biggest impact. This is precisely the leadership vision I seek to provide.

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