Jean-Marc Grognet – General Manager, Genopole, France

The research being done at Genopole puts us at the forefront of innovation

21.03.2019

Tags: France, Cluster, Genopole, Research, Investment

Jean-Marc Grognet, general manager of Genopole, France's leading biotechnology cluster, explains the organization's unique triangular structure with the corner points of the cluster being higher education, research, and industry. Grognet goes on to elaborate on the cluster's extensive scientific offering and his ambitions to build a collaborative network of life science clusters while developing Genopole as an internationally renowned reference in genome sequencing.

What motivated you to enter the start-up environment as CEO of Genopole?

I am a pharmacist by training and throughout my career with the French Alternative Energies and Atomic Energy Commission (CEA), I have always been at the interface of fundamental research and applied technologies. Even as a researcher in my lab, I was deeply interested in the utility of my research. During my last period at the CEA, I was in charge of the Health Technologies program which had an objective of helping researchers build their own companies. Therefore, coming to Genopole was quite a logical step.

Can you please give a brief introduction to Genopole?

Genopole is France's leading bio cluster for biotechnologies and research in genomics and genetics. It is built upon the model of American and European campuses and unites actors from what we call the "knowledge triangle" in a single site: innovative high-tech life sciences companies, public research and higher education. These include the University of Evry Val d'Essonne which has 12,000 students, about 1,000 personnel across 17 research laboratories, and 87 companies which represent 1,500 people with an overall turnover of EUR 307 million as of 2017. So far, we have done a good job in creating this triangle, but it is not yet complete. In the middle of this triangle, we want to place the patient. Genopole has the South-Paris Region Hospital Center on site, the largest hospital in the region other than the *AP-HP (Assistance Publique – Hôpitaux de Paris* – the hospitals of the Paris-Region*).* Compared to other bio-clusters in the world, Genopole is rather young, having been established in 1998. Genopole receives extensive support from both national and local authorities. The bio cluster is funded by the State (Minister of High Education, Research and Innovation), the Paris Region, Paris Region, Evry Agglomeration and AFM-Téléthon (The French Muscular Dystrophy Association).

What are the capabilities that are putting Genopole at the forefront of gene therapies?

In Genopole we have four main fields of interest: personalized medicine, innovative therapeutic solution, digital genomics, biotechnologies related to environmental matters and agri-food.

Personalized medicine is based on the cluster's main capabilities in genomic sequencing. Genopole has one of the largest facilities for genome sequencing in Europe. In fact, this year, the Center of Reference, Innovation, and Expertise (CReflX) included in the Genomic Medicine France 2025 plan will be hosted here in Genopole. Not only do we have workers on sight working in personalized medicine, but companies as well.

The new therapeutic solutions I mentioned refer to cell and gene therapies. In the fields of these revolutionary therapies, the research being done at Genopole puts us at the forefront of innovation.

Personalized medicine and genobiomedicine, gene therapy, cell therapy and industrial biotechnology based on synthetic biology will rely on the considerable progress of digital and related technologies (big data, artificial intelligence, etc.) to develop and take new paths.

Today, about 70 percent of Genopole is devoted to biomedical subjects and the other 30 percent to environmental, agronomic, and industrial biotechnologies – an area where we expect to see an increase in the future.

How does the corner principal of higher education fit into all of this?

Genopole is dedicated to its collaboration with the higher education institutions of Évry-Courcouronnes which consist of the University of Évry Paris Saclay, ENSIIE, Télécom SudParis, and Telecom School of Management. We share the strong ambition to consolidate this network that includes training, research, and industry in the interdisciplinary field of life sciences in order to attract more students, researchers, and entrepreneurs.

One example can be seen by Patrick Curmi, president of the University of Evry Val d'Essonne, who is in charge of establishing a higher education plan for the FMG 25. It is very important to educate medical doctors and general practitioners on genomics and sequencing as they will face these topics as part of the healthcare dialogue within the upcoming years.

How important is internationalization to Genopole in building the cluster's reputation as a leader in biotechnology?

In Genopole, we are doing very international research, positioning ourselves as pioneers in biotechnology areas. However, for the time being, our international profile is not at the level which we would like it to be. Two years ago, we decided to put an emphasis on international activities. Our first step was to identify a select number of bio-clusters in leading countries such as the US, Canada, Korea, Japan, China, and Singapore to create research collaborations and act as a reciprocal landing pad for companies to develop internationally. For example, Genopole signed agreements with a cluster in Montreal called NEOMED and the Biolake cluster in China. Moreover, we are proud to say we have been awarded the title of "outstanding research park" by the Association of University Research Parks (AURP) in the US.

What are some examples of life science industry players that have chosen to establish operation at Genopole?

Genopole has been successful in attracting Illumina, the reference in the field of sequencing, to the bio-cluster. They have chosen to set up their first commercial and training Center in France here at Genopole. The solutions centre will offer demonstrations, instruction, and education in the latest genomics technologies from Illumina for up to 1,000 scientists a year, providing direct links to

Illumina’s global network of facilities and in-house experts.

We have also attracted international companies like Pharming, a Dutch company dedicated to the development and production of human therapeutic proteins; New England Biolabs, an American manufacturer of research reagents, specifically molecular biology enzymes; and Ariane clinical research, a Franco-American CRO. Furthermore, Japanese ophthalmology group Santen has established an international R&D centre here at Genopole. Since 2014, Santen SAS has been a centre of excellence of the Group dedicated to the research and development of innovative ophthalmic treatments. Of course, we are continuing our efforts to attract business to Genopole, including large pharmaceutical players, and it wouldn’t hurt to have a Big Pharma set up an R&D unit here.

What capabilities can Genopole offer to its partners and what makes the cluster adapted to not only start-ups but also well-established companies?

I want to start off by saying that it would be a nice opportunity for any company, large or small, local or international, to come to visit Genopole and experience the activities, labs, and ecosystem here for themselves in a closer capacity. This is the best way to get a true feel for the biotechnology environment of Paris and the region.

As seen on the annual Biotech Map of Biotech Finances, four out of ten biotechnology companies based in the Ile-de-France region are housed here in Genopole. Being a part of Genopole will put companies in the epicentre of a very powerful bio cluster, giving them the opportunity to recruit brilliant talent, connect with high-level laboratories, and forge a network with innovative start-ups.

Furthermore, Genopole still has tremendous growth potential. We have five and a half hectares of land reserved for development and a plan for further expansion. This leaves ample room to build new laboratories, production facilities, pilot plants, and many other projects.

Another strong asset we leverage are the 28 technological platforms which exist here at Genopole. These facilities and resources are accessible to all companies and laboratories in Genopole. One example being electron microscopy. No start-up in their early stages are able to buy such a tool, so we have equipped one of the labs with this microscope and trained operators how to use biological aspects so that our members can ask for analysis on this platform.

In the face of innovation powerhouses like the US and China, how can Genopole and other life science clusters come together to create an internationally competitive 'European offer'? And may we ask, what impact do you think Brexit will have on such collaborations?

Genopole is absolutely willing to be connected with other European clusters. We are working today to identify partners at the European level as well. Our aim is to come together and approach the European Commission to obtain European grants and have more weight on an international scale. It is impossible in today's climate to remain isolated within Europe. Building a strategic network is a key priority for Genopole and we hope to announce the affirmation of partnerships within the region.

Speaking on Brexit, there are many influential research labs in the UK that will not simply disappear from one day to the next. Genopole will still be open and actively keen on establishing relationships with these clusters, despite the challenges that may arise after the 31st of March.

What makes Genopole a partner of choice for intra-cluster collaboration?

Sharing knowledge and best-practices between clusters who may have diverse specializations is key in helping start-ups to be creative and allowing companies to develop in a nurturing environment. There is not a singular formula to success and Genopole alone does not have all the answers in making this happen. By mixing our recipes of innovation, we can create a mutually beneficial communication channel to boost European industry and be better together.

What final message would you like to deliver to the global life sciences and research community?

Genopole is an expert in genome sequencing. In Europe, we have all the pieces of the puzzle to build the next generation of medication – education, research, and industry. Bringing together within a unique ecosystem, the higher-education institutions, the suppliers, and the clients are absolutely fundamental in the success of Genopole. All this, not to mention the hospitals and patients who are in the centre of all that done at the cluster.

Lastly, I invite all life sciences creators, innovators, researchers, and entrepreneurs alike to come to visit us and decide for themselves if Genopole is the place to be!

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