Let’s join forces!

At the dawn of the year 2000, the Université Libre de Bruxelles decided to embark on a gamble which was a bit mad: set up its biotechnology centre on the Aéropole of Charleroi.

10 years later, we have to admit that the wager has been more than won! With over 550 researchers and a dozen spin-offs, the Biopark Charleroi Brussels South is one of the best showpieces of our region!

The passion is far from drying up and new projects will soon see the light of day. These will strengthen even further the strategic position of our region as one of the leaders in Life Sciences in Wallonia.

This leading position is largely due to the precursor role that ULB played in the dossier.

The reputation and the presence of the Université Libre de Bruxelles in Charleroi has taken on an important role in the expansion of the human capital in our region.

It’s not a secret for anyone, Charleroi has for too long been short of university courses to meet the needs of its student population.

Of students leaving secondary school, only 15% go on to higher education compared with an average of around 30% in the French Community as a whole.

It’s a structural problem to which it is more than necessary to find a sustainable response beyond the present problem of the Academies!

It’s essential to intensify the university presence, improve the provision of local university education, especially the BA, and ensure the strategic development of the region.

Of course, the «Forces Vives» aren’t asking for Charleroi to have its own university but it’s by diversifying and multiplying these collaborations that we can provide better education to our young people locally.

ULB understood this problem very well. That’s why it was one of the first players to accept the idea of setting up a Technology Campus on the Aéropole.

A Master’s degree, organised only in Charleroi, and continuous training aimed at professionals – people working in university and industrial laboratories, teachers in Hautes Ecoles and job seekers – has extended the courses provided by the University in our area.

The «Forces Vives» consider the setting up of the Walloon Centre for the production of cell therapy products as a priority dossier for the development of the activities of research, teaching and technology in our region.

As President of the Comité de Développement Stratégique de la région de Charleroi et du Sud Hainaut, I can assure you that we support all initiatives of the Université Libre de Bruxelles which enable Charleroi students to blossom and be trained in an educational, cultural and democratic quality environment.

In addition, strengthened by its repeated successes, I’m convinced that ULB will, in the coming years, consolidate and reinforce the fundamental role it plays in the strategic development of our region.

Antonio Di Santo
President of the Comité de Développement Stratégique de la région de Charleroi et du Sud Hainaut
In just a few years, the Université Libre de Bruxelles has settled down in Charleroi, as we can see today, in particular in the Biopark Charleroi Brussels South. Memories of the past and thoughts for the present and future with Oberdan Leo, Assistant President for the development of ULB on the Aéropole of Charleroi.

> These last few weeks there’s been a lot of ink spilled over the presence of universities in Hainaut: different political players have reminded us of the importance of this presence, in Charleroi in particular. ULB in Charleroi, in the heart of Hainaut, is it a reality?

Oberdan Leo: Yes, since the ‘90s, ULB has been present in Charleroi, organising different education and training. At that time it was a university without a campus. Then, in 1999, ULB somehow became anchored in Charleroi, setting up the Institut de Biologie et de Médecine Moléculaires, with almost 200 researchers from the ULB faculties of Science and Medicine. Today, the IBMM has swarmed: we now have the Biopark Charleroi Brussels South with its research institutes, technology platforms, economic development team, incubator, spin-offs and training centre. Today, ULB fulfills in Charleroi the three missions of a university: teaching, research and service to the community, especially by the creation of enterprises, continuous training...

> Then a researcher at IBMM, you arrived at the Aéropole in 1999. How did you feel about that?

Oberdan Leo: I have to admit our first feelings were mixed. Most of the researchers had no political vision then, they didn’t really know the role of the Walloon Region compared with that of the French Community in the financing of research. They didn’t really identify the possibilities of collaboration with the two public authorities… We didn’t know much about the industrial sector and couldn’t imagine the synergies we could have with it… It’s true that in the ‘90s, we didn’t yet speak about competitive clusters. We were also afraid our students wouldn’t follow us to this decentralized campus.

> And in 2010, is the feeling the same?

Oberdan Leo: No, we’ve evolved. Events have shown us that our fears weren’t justified and the Walloon landscape has also evolved. Encouraged especially by the Walloon Region and the BioWin cluster, we’ve set up close collaborations between academic and industrial laboratories. We also understand that, by working together, we can acquire more efficient equipment for use in basic research, Go for Charleroi

Patrick Di Stefano, TTO

«In autumn 2010, ULB owned around 110 families of patents, about two thirds of these protecting inventions in the areas of biotechnology and health. In this portfolio there are around thirty inventions involving inventors and companies on the Biopark, that is, about half of our patents in life sciences. The number of patents applied for annually has been more or less stable for a few years (about 20 a year) and the portfolio is regularly increasing. What are the consequences of these actions? We can, of course, think of the direct financial impact, particularly the royalties paid by the companies using our patents under licence, the research contracts linked to the patents and the activity generated by our spin-offs. In this context we should remember that ULB has a higher rate of transfer of its patents (licences) than the European average. However, we shouldn’t forget the growing importance, particularly on the Biopark, of the activity linked to the participation of ULB in R&D projects financed by the authorities and the private sector via the competitive clusters (BioWin) and regional (Waleo, FIRST…) and European (Hainaut Biomed/CMMI,...) programmes. This is another aspect of development, which is becoming more and more important for the Biopark and in which the role of the ULB TTO (Technology Transfer Office) is also vital.»

Marc Debois, General Manager of Igretec

«ULB and IGRETEC have a long history which we could call a success story. Firstly, the presence of the Biopark Charleroi Brussels South in the Aéropole contributes incontestably to the reputation of the scientific park. It’s not by chance that in turn the King, the President of the European Council, Herman Van Rompuy, and the Walloon Government visited this centre of excellence. During their different collaborations, the Intercommunale is very pleased with the professionalism of the members of the University. Point Centre, Wallonia Biotech 1, the future Wallonia Biotech 2 and 3 and the Centre of Cell Therapy are many examples of the fruitful collaborations between our research and real estate development departments, our economic development agency and the University authorities. Our common objective: economic development in the region of Charleroi.»
Beyond the Biopark

If the University has invested so much in biotechnologies that they are now a leading area of expansion in Charleroi, ULB is also very involved in providing local education. Since 2009, it has organised in the town centre a full-time Bachelor’s degree in Human Sciences and an evening class Master’s in Work Sciences. To note also, among the actions aiming to bring more young people to the University: the ULB Centre de Culture Scientifique ULB. Via its exhibitions, animations, presentations, meetings, it stimulates the curiosity of primary or secondary school pupils, making them question, titillating their critical spirit, enriching their knowledge and entertaining...

http://www.ulb.ac.be/ccs

Michaël Giesser, Ex job seeker

«I’m 22 and live in Junet. I followed the Biotechnology courses organised by Biopark Training and FOREM and today I have a job as an analyst in DNA Vision. I participated in the biotechnology training as I’d been looking for a job for a year. The subjects covered and the fact it was in the Charleroi area also persuaded me to follow this course. I found the training interesting because it was very practical and I also discovered and had contact with different employers in different domains».

Nadine Van Lerberghe, Teacher at the HEPH-Condorcet in Ath

«I followed the Biopark Training course in flow cytometry (theory and applications) because I wanted to increase and update my knowledge in this subject of which I already knew the principles. I’ve now incorporated a part of the knowledge acquired into my biotechnology and animal cell culture courses. I also signed up for the training course in imaging, with a view to having an update on recent techniques. The plus of the Biopark Training is the presentation of recent cutting-edge techniques. The fact that the training is given in Charleroi isn’t important for me and didn’t affect my choice (I teach in Ath and live in Rhode-Saint-Genèse)».

> Without going into details, give us a few examples of recent actions.

Oberdan Leo: Of the latest actions, the most striking are perhaps those taken thanks to the support of the Walloon Region to carry out three missions: to help to create and support spin-offs and start-ups, to set up reception facilities and to participate in the economic development of the Biopark. In a few months the Biopark Incubator will have a location for new businesses of 4,000 m² on the Aéropole, built by the Intercommunale Igretec.

Valérie Martinelli, Lab Technician

«Since 2003 I’ve worked as a laboratory technician at IBMM and, to be more precise, since a few months ago in the Biology of the Nucleus Laboratory. There are few places in the region of Charleroi which provide the opportunity of working in scientific research in a university. Since I come from the region, the establishment of ULB in Charleroi means I can do really interesting work with the advantage of being close to my home in Genpinnes.»

> The 3rd mission – services to the community – is also very important in the region?

Oberdan Leo: Yes, we pay particular attention to innovation and entrepreneurship, increasing regional growth. There is innovation in the Biopark, with a development cell specialised in biomedical dossiers in the ULB Transfer Technology Office. Innovation is also encouraged by the Biopark Incubator, an incubator subsidised by the Walloon Region to carry out three missions: to help to create and support spin-offs and start-ups, to set up reception facilities and to participate in the economic development of the Biopark. In a few months the Biopark Incubator will have a location for new businesses of 4,000 m² on the Aéropole, built by the Intercommunale Igretec.

> We know ULB has invested heavily in Charleroi, thanks especially to help from the Walloon Region and the European Union. What is the fall out of this presence for the region?

Oberdan Leo: This is seen in different forms. Fall out in terms of image, of course. Charleroi is now a place of international renown for its research in the biotechnology sector. It’s also here that the competitive cluster
BioWin was set up. There’s also more immediate socio-economic fall out with the creation of direct and indirect employment. ULB has created six spin-offs on the Aéropole, the Biopark provides over 500 jobs for people who «live» here, buying paper for their printers, delivering sandwiches, etc. Our laboratories have dozens of trainees from the Hautes Ecoles of the region, several of whom have already been engaged in the Biopark. Recently, Biopark Training helped several job seekers find employment in industry...

> Can we already measure this today?

Oberdan Leo: Yes, but we need objective data, figures, perspectives, which we haven’t had time to collect yet. And, of course, if we already see the fall out, we’ll probably have to wait a few more years to see objectively the impact of our presence on the development of the region.

> And you, what do you expect from the region and its political and/or socio-economic players?

Oberdan Leo: We hope for coherence and continuity in investment. The sector is expanding but it’s still young and potentially fragile. We therefore need to set up a constructive dialogue between the different academic and industrial players and ensure the long-term future of our public financing, after evaluation, of course.

> You are Assistant to the President of the University for the development of the ULB site on the Aéropole of Charleroi. Today, what are the main stakes in this development?

Oberdan Leo: We’re here in Charleroi, one of the most populated regions of Wallonia where, however, the percentage of young people who study at university is the smallest. By strengthening our provision of local education or by showing what the University and its research are, we can help to increase this rate. By the way, this is why the Biopark organised an Open Day in its laboratories. Our skills in one of the areas of excellence of Walloon industry have been recognised today, it’s up to us to keep up the quality. We also need to keep an eye on the viability of our spin-offs and hence help the economic development of the region. Finally, we’ve set up several scientific collaborations with UMONS, the most visible no doubt being the creation of the imaging centre, CMMI. Together we must continue to gather the skills of our Academia in the biomedical field on the Charleroi campus, more or less halfway between Brussels and Mons.

Frédéric Lhommé, Researcher

«Since April 2006, I’ve been responsible for the flow cytometry platform at IMI and since September 2008 I’ve also been responsible for imaging by flow cytometry in CMMI. I’m 39 and live in the north of France. In IMI, I take care of the verification of cytometry instruments, train and advise users and do cell sorting. In CMMI, I’m responsible for imaging by flow cytometry (ImageStream, Amnis). The ImageStream technology associates in the same apparatus the visual power of microscopy with the statistical rigour of flow cytometry and therefore enables the characterisation of isolated cells moving in a liquid suspension. Its major interest lies in the possibility of correlating the results obtained by these two complementary techniques and generating quantitative and qualitative cell profiles. From the purely microscopic point of view, this technology gives a visual representation of the cell in movement, which saves a lot of time compared to traditional microscopic analysis. I work with different academics in the Biopark and the Académie Wallonie-Bruxelles, and also with industrialists in the health sector. I also participate in the cytometry training courses in Biopark Training where there is a module specific to ImageStream.

My presence in the Biopark has enabled me to be a part of the CMMI adventure and has opened up new perspectives in work, collaboration ... The high density of biotechnology companies and laboratories is a reservoir of new opportunities which I have just started to dip into ..., and when you see the forest of cranes on the Aéropole, the spring doesn’t seem to be about to dry up!»

Nadine Nilles, Master’s Student

«I’m 22 and from Luxembourg where I still live, although at the moment I’m in student accommodation in Brussels, as I already did my Bachelor’s at ULB. After my Bachelor’s, I decided to continue to do a Master’s in Molecular Biochemistry and Biology in the Biopark. Why this choice? Firstly, because the subjects taught interest me a lot and maybe I’ll go on to do research later: adding a small piece of the puzzle of how cells work and understanding a bit better how it is possible that there are so many so complex different beings (not only man, even a little bacterium is fascinating).

Then the fact that some of the courses are given in English attracted me to this Master’s. As English is the language of research so to speak, I said to myself it would probably be a good opportunity to improve, especially my speaking. I don’t know if it’s the fact of being in the milieu of the Biopark which makes people extraordinary lecturers but I’m always impressed by the things the people have already done in their lives!»
August 1993, Hervé Hasquin, then President of the Board of Governors of the Université Libre de Bruxelles called an exceptional meeting: The Walloon Government was going to give a ruling on the Objective 1 project, the University decided to apply for the creation of a biotechnology research centre (CRB) in Charleroi. In the room, Jean-Louis Vanherweghem, Dean of the Faculty of Medicine, suggested involving his Faculty in this ambitious project, then centred on the laboratories of the Faculty of Science installed in Rhode-Saint-Genèse.

Inauguration
In 1999, IBMM was inaugurated. «The researchers were worried. They didn’t like the idea of being far from the Brussels campuses, they would lose their final year and doctorate students. They wondered if, when their research was supported by the Walloon Region, it would be too oriented towards applied research, etc. At my suggestion, over 5 years ULB spent 3.7 million euros on the creation of mandates for doctorates and post-doctorates in IBMM. The teams received new laboratory equipment, the first research contracts allayed fears of oriented research... and, in the end, we managed to transform an infrastructure project into a coherent scientific one, in a cutting edge sector for ULB, molecular biology», remembers Jean-Louis Vanherweghem. «At the same time as we were setting up IBMM, the first spin-off, Henogen, was created, benefiting from the IBMM GMP laboratories. From the beginning, we were careful to combine research of excellence with economic development».

President
At the end of the ‘90s, people were already speaking about the phasing-out of Objective 1 and ULB decided to seize this new opportunity to create, along with the University of Mons (then UMH) and Igretec, a research transfer centre, BioVallée. Jean-Louis Vanherweghem managed the dossier until he left the position of rector in 2000. The asbl (non-profit making organisation) BioVallée was created in 2001.

Two years later, Jean-Louis Vanherweghem was elected President of the Board of ULB. Once again, the Charleroi dossiers landed on his desk. The first was a chance meeting during a colloquium which got him started. Jean Stéphenne, CEO of GlaxoSmithKline Biologics, wanted to concentrate his research efforts on precise areas corresponding to the skills developed in the ULB laboratory of Michel Goldman. The idea of close scientific collaboration germinated. In January 2005, the Institute for Medical Immunology was inaugurated. It was the first public-private partnership (PPP), associating ULB, GSK and the Walloon Region. IMI and its sixty or so researchers settled in nearby, in a building which the limited company Biopole ULB Charleroi.
(BUC) bought from Igretec. BUC also acquired the facilities of Point Centre and thus enlarged the range of services it provided: administrative support, management of animal housing, renting of offices, provision of rooms for meetings, colloquia, conferences, etc.

Vaccinology
The next dossier to be managed in Charleroi, the non-profit making organisation, BioVallée, was for Jean-Louis Vanherweghem. He took over the presidency of BioVallée which, if it enabled the creation of the spin-offs Delphi Genetics and DNAVision, had difficulty, however, making a living from its external customers. Besides, the phasing-out financing was finishing. The Board of Directors of BioVallée began its conversion to a public research centre recognised by the Walloon Region. In the following months, the centre concentrated on one area, vaccinology, and became, in 2007, the first integrated centre of vaccinology in the Walloon Region, fulfilling two complementary missions: the measurement of immune responses in the laboratory and clinical investigations with CHU Tivoli (La Louvière). A few months later, BioVallée was rebaptised ImmuneHealth, a name which corresponded better to its field of activity.

During these years, other projects and achievements took place on the Aéropole of Charleroi: the Laboratoire de Biotechnologie Végétale of the ULB Faculty of Science moved in; several spin-offs were set up. Some spin-offs were formed directly from the laboratories on the Aéropole. This is the case for the first one, Henogen, and also for Delphi Genetics, DNAVision and BVTS. Others came from outside, attracted by what we now call the Biopark. Euroscreen and Bone Therapeutics came out of the Erasme research laboratories, emphasises Jean-Louis Vanherweghem.

Hainaut Biomed
In the middle of the 2000s, a new opportunity arose, the Convergence programme. Once again, ULB seized it. Under the coordination of Michel Goldman, the project Hainaut Biomed was submitted to Europe and the Walloon Region. In 2009, the training centre, Biopark Training, was set up. A few months later, the Center for Microscopy and Molecular Imaging, CMMI, was created, closely associating the competences of ULB and UMONS. At the same time, a second incubation building was built by Igretec and a support unit, Biopark Incubator, was created.

«The last 15 years have shown us that the Biopark was the result of a series of opportunities seized by the University. But none of this would have been possible without the support of different partners, especially Glaxo SmithKline Biologicals, which had a pioneering vision of collaboration between enterprises and universities and held our scientific research in esteem. If the University seized the opportunities, it did so with a fixed objective, selecting the projects which fitted with this idea and relying on our recognised skills», observes Jean-Louis Vanherweghem, at the same time insisting «I’ll take this chance to thank everyone who believed in it, who played the game and invested in the Biopark».

Education
The challenges for tomorrow? The President of the Board sketched them out: «The Biopark and its players is a real success story but it’s just the beginning of the story. We have to be careful to consolidate these still very young operators. We have also to think about providing education in Biology in Charleroi. This year we launched an original Master’s (MA BBMC), with an international aim. We have to continue, providing Charleroi students with education for a BA with UMONS and working with the Hautes Ecoles of the region on reorientation. Just as we launched human and social sciences in Charleroi by introducing a BA, so we have to provide complete education in biology, supported by our research laboratories». 

Orientation
«At the helm» from the first steps of the Biopark, Jean-Louis Vanherweghem will leave the Biopark and the presidency of the Board of ULB in January. «We mustn’t hold on to dossiers where we no longer have the necessary skills, even if the Biopark will always have a special place in my heart. As a medical doctor, I’ve always been very surprised by the gap which exists between the transfer of knowledge from the test tube in the laboratory to the hospital bed. It’s a major challenge today. The medical domain, and the Biopark is one of its players, is perhaps the one where the economic development of research isn’t simply synonymous with dollars or euros but also with service to man. Participating in this challenge is very motivating. During the last few years, my principal skill has been to put together the skills of others and orient them into a strategy which would then become institutional. When I’ll leave the presidency of the Board, I’ll lose my capacity for orientation and therefore, in a way, my competence. Others will take over». 
4 Charleroi key players

In a resolution carried by the PS group, the Conseil Communal of the City of Charleroi asked the Minister of Higher Education to envisage all the ways to guarantee a balanced development of higher education in general, and university education in particular, in all of Hainaut. The Conseil Communal of the City of Charleroi also asked the Minister to examine all options which might encourage universities to invest, both in terms of provision of various training courses and personnel, buildings and operations in the region of Charleroi, at the same time encouraging consistency in the education provided. Biopark News asked the same question to four Charleroi politicians- Bourgmestre Jean-Jacque Viseur (CDH), Ministers Paul Magnette (PS) and Jean-Marc Nollet (Ecolo) and the Secretary of State, Olivier Chastel (MR) : What do you expect from a university in Charleroi?

Olivier CHASTEL

More young people at University!
In Hainaut, the Mouvement Réformateur is the first party to give an opinion against the project of regionalisation of university and other higher education developed by the Minister Marcourt, by the promotion of «pole» to the detriment of «Academies», and principally the Académie Wallonie-Bruxelles (ULB-UMONS).
Our Academy must be, in fact, the principal base for reinforcing university education everywhere in Hainaut, in Charleroi in particular. The Hainaut centre of excellence, which is interesting due to its local network, must develop and strengthen its ties and synergies with ULB as far as financing and authorisations are concerned, in order to guarantee greater access to the young people from Hainaut to both the University and other higher education establishments.

Paul MAGNETTE

Charleroi really needs a university, for three reasons. Firstly, given the backwardness accumulated historically, because of the absence of a university in the area of Charleroi, we must put in place all the tools necessary for adults who want to take up their studies again, and make the region of Charleroi the centre of the open university of the Communauté française. Furthermore, in order to improve access of the Charleroi population to higher education, what is provided in the first years of training must be as wide as possible and accessible to everyone. It must really be local education. Finally, the extremely positive experience of the Biopark has shown that Charleroi also has the authority to receive research and education centres of excellence, in areas in line with its socio-economic strengths, such as occupations in health, environmental science, engineering and logistics.

Jean-Marc NOLLET

The statistics are worrying: today only 15 % of Charleroi youngsters with a secondary school diploma go on to university. The region of Charleroi now has a huge potential as far as local higher education is concerned. What’s important today is to make complete education courses, especially the first cycle (Bachelors), and studies open to the professional public (for example, Masters during evening classes) more attractive. The areas concerned are, in particular, those of human and social sciences, new technologies, the aerospace sector and biotechnologies (around the Charleroi Biopark and the Aéropole). It’s also highly desirable that the different areas of research done in the region are nurtured by the high-tech doctoral and complementary masters training given in the research centres. At all levels, it’s therefore the cooperation between universities, Hautes Ecoles, research centres and enterprises which can contribute to regional development, which would mean strengthening the synergies even further.
iGEM: Bronze medal for ULB

In November a multidisciplinary team of professors and undergraduate and graduate students in biology, bioengineering, bioinformatics and philosophy from the Université Libre de Bruxelles participated in the prestigious international competition in synthetic biology iGEM. The ULB team, the only team from Belgium, defended its project at MIT in Boston: the conception by genetic engineering of a strain of Escherichia coli with an improved natural way of synthesing hydrogen. Coordinated at IBMM, this student project won a bronze medal at iGEM.

Delphi Genetics: 1st stone

Delphi Genetics decided to invest in the construction of a building of 1600m² following the growth in its activities. The building will be on the Aéropole, in the immediate proximity of the Biopark Incubator, IBMM and IMI. The ceremony of laying the first stone took place on 13 December in the presence of Jean-Claude Marcourt, the Minister of Economics of the Walloon Region, Jean-Louis Vanherweghem, Chairman of the Board of ULB, Didier Viviers, Rector of ULB and Pierre Rombaux, Director of Economic and Real Estate Development of Igretec. Alongside the founders of the spin-off, Philippe Gabant and Cédric Szpirer, they have symbolically laid the first stone of the building.

Jean-Jacques VISEUR

The Bologna process, the growing competition of universities in Europe and the exorbitant cost of apparatus and instruments oblige research centres to reach a critical size to be able to compete or collaborate with big universities, especially Anglo-Saxon. Grouping into three academies responds to this logic. Our mistrust of the idea of a fourth centre is that we’d have to spread the financial means while, on the contrary, we should be concentrating them and looking for economies of scale. Charleroi is already totally committed in the areas of cutting edge research, strengthened further by the competitive clusters. It’s in Charleroi that the Biopark enables the permanent exchange between pure and applied research and a fruitful dialogue with enterprises to create the products of the future, at the same time providing specialised education in the second and third cycles so close to research.

The university must also get closer to potential students. In poorer economic regions the fear of failure and its economic and social consequences too often distance a university from people who are gifted and perfectly capable of getting a bachelor’s or master’s degree. The solution is to give the teaching of the first years of the bachelor’s degree to Charleroi and, once the students have succeeded, they could continue their studies elsewhere.

The second way is an open university, giving training which would lead to diplomas and certificates to those who, already involved in professional life, have acquired the experience allowing them access to university.