The Biopark Charleroi Brussels South Newsletter

n°15 — fall 2012

Biopark Training

Already 4 years old 2
At the heart of the Biopark 4
Mission: employment 6
Looking out for the sector’s needs 8

Surprising picture 10
Caresquare: remote patient monitoring 11
AIDS: progress made at IBMM 12
Biopark Training celebrates its 4 years old. Arnaud Termonia, its director, gives us the story so far and outlines the future development of the Biopark training centre.

WHERE DID THE IDEA FOR BIOPARK TRAINING COME FROM?
Arnaud Termonia: The biotechnology and biomedical sectors are developing rapidly. The appearance of ever more advanced technology requires specialist training courses, and at the time there was no training centre specialising in these fields on the Biopark. Our academic management took action in order to meet the needs of different stakeholders in the sector. The centre currently targets three distinct audiences: jobseekers, who represent a reserve of potential future qualified staff; businesses and academics wishing to keep their technical and transferable skills up to date; and higher education teachers who need to teach highly qualified students while meeting the needs of industry.

HAVE THE INITIAL OBJECTIVES BEEN MET?
Arnaud Termonia: Definitely! Biopark Training was founded in 2008 and we have already seen 1230 students pass through our doors to attend 90 different training modules. This translates into 45,000 hours of classes given by five full-time trainers: the results are more than satisfactory. Our trainees include staff from 30 different companies, every French-speaking Belgian university, and 90% of Hautes Ecoles in the Fédération Wallonie-Bruxelles that provide biomedical courses. Our long courses have

SOME FACTS ABOUT BIOPARK TRAINING...
> It is an R&D training centre and part of a solid network
> 1230 trainees have sat 90 courses
> 45,000 hours of training
> 5 full-time trainers
> 8 sources of funding
been attended by 60 jobseekers with 80% of them finding work upon completion of the course. I think that results like this show that we are able to meet the needs and demands of the sector.

**IS BEING ON THE BIOPARK AN ADVANTAGE?**

Arnaud Termonia: Not only an advantage, it’s essential. Firstly in order to understand the sector: an R&D oriented training centre with no connections to research and industry doesn’t make sense. We need to be in the field, in contact with sector stakeholders. It is also essential to be able to enjoy the site’s facilities, expertise, and cutting edge equipment. Our training programs take place on the Biopark that is a hub for research, training, and industry: leaving this triangle would kill our effectiveness. I also believe it to be a win-win situation for all of the Biopark’s partners. We train qualified individuals who work on the campus or find a job there. Our short courses also meet the specific demands of our partners. The businesses on the site open their doors to us or come and present their business to the trainees. We are not an isolated player: we are part of a network.

**ARE ALL OF YOUR PARTNERS PRESENT ON THE BIOPARK?**

Arnaud Termonia: Definitely not. We follow the example set by the Biopark and develop outward looking partnerships. This has enabled us to find complementary skills, to develop new projects, and to form part of a network that includes *Hautes Ecoles*, the *BioWin* competition cluster, training centres (*Cefochim, Forem*), small and large businesses, and the future technology campus. These partnerships are also often paths to new sources of funding. In the beginning we were funded by the European Social Fund (Wallonia, Europe), the *Académie Universitaire Wallonie-Bruxelles*, and the *ULB*. Today, we have a more varied range of funding.

**WHAT ARE THE NEXT CHALLENGES FOR BIOPARK TRAINING?**

Arnaud Termonia: After four years, we are going to push ahead with our development strategy. We will continue to offer a packed prospectus of technical training in specialist fields like immunology, cellular biology, and imaging. We will also offer cross-disciplinary training courses. These courses will cover subjects like management for the biotech and biomedical sectors (see the “STRATEGIO” program in issue n°13). We are also currently developing modules in English in order to convert our local success into a European phenomenon. And of course, we will continue to satisfy the demands of the market.

Sandrine Rubay
“When we founded Biopark Training, we met with Belgian biotech companies to learn about their training needs. We then cross referenced the findings with the skills and equipment available on the Biopark, progressively expanding our range of courses”, explains Erika Baus, a Biopark Training trainer.

Today, the prospectus includes around 60 short courses (half-day to 5 days), that serve as either an introduction to a theme or examine a particular aspect of a subject in depth. “A lot of companies wanted courses in flow cytometry that we were able to create in collaboration with the ImmuneHealth research centre”, she continues. “The immunology courses will be available from November, and benefit hugely from the expertise developed in the IBMM and IMI; imaging courses naturally involved input from the CMMI; and the cell culture courses gained a boost from the arrival of MaSTherCell, focusing in the production of cells for use in treatment…”

Some courses were also made available upon request to academic labs that wanted to develop their students’ or technicians’ independence. Others were born from chats at the water cooler between a scientist and a trainer, or even at the end of a course due to students desiring to cover a subject in greater detail.

DISCUSSIONS

“Even though I worked in these fields during my PhD and post-doctorate research, I don’t claim to know molecular biology or immunology as well as someone who has been immersed in the subject morning, noon, and night for the past 10 or 20 years”, smiles Erika Baus. “I’m learning a lot through brain storming sessions with the scientists I talk to during each training project, or who I ask questions about a particular technique or piece of equipment.”

Most of the short courses can be grouped under three sections: a general theoretical introduction, a practical introduction using machines from the Biopark or loaned by external companies, and more specialised subjects often given in partnership with a Biopark scientist. Scientists like Joël Tassignon, ImmuneHealth’s Flow Cytometry platform chief and instructor on Biopark Training’s Flow Cytometry course. “A number of (bio-)pharmaceutical or biotechnology companies outsource their flow cytometry analysis to us; we work according to strict quality criteria, using proven methodology that requires both technical expertise and an ability to think outside the box. For me, the courses are an opportunity to share my experience and skills, and to teach people about ImmuneHealth’s technical possibilities,” he explains. “We are also thinking of organizing a cell sorting module using our cutting edge equipment.”

ENCOUNTERS

In a nearby office, Laure Twyffels is also taking part in a Biopark Training’s module. “When I was working on my thesis I used a lot of fluorescent microscopy techniques, and I really took a shine to it; today I work in the Fluorescence Microscopy unit at the CMMI,” she explains. “When Biopark Training asked me to get involved in a training module, I said yes straight away.” Ran once in 2012, the fluorescence microscopy course is on offer again in October and will no doubt be repeated as almost all of the places are already taken. “In the past, I gave training on an as needed basis to people who may need to use the microscope; from now on I’ll suggest that they take part in a professionally organised course,” Laure Twyffels states. “For people like me, the course is also an opportunity to make contacts: I have met colleagues from the Erasme and Solbosch campuses, and we found that we had areas of mutual scientific interest, and course participants have asked to come back and analyse samples on the CMMI equipment, etc.”
“Involving experts in our courses is a definite plus: participants can direct asking questions at someone who uses the techniques on a daily basis, and they are also able to visit a cutting edge lab or be introduced to sophisticated equipment that is often rare and expensive... For the experts, their participation is short and specific, meaning that they don’t need to spend too much time away from their main role: research,” Erika Baus concludes.

Nathalie Gobbe

Gisèle Deblandre, Program and Operation Manager at the Paediatric Hepatology and Cell Therapy Lab/UCL’s IREC

You took part in an “Introduction to Molecular Imaging Techniques” course at Biopark Training. Why?

Gisèle Deblandre: I wanted to understand the fundamental techniques of modern molecular imaging, and find the best ways to monitor cells once they have been injected into an animal for use in our lab.

DID THE COURSE LIVE UP TO YOUR EXPECTATIONS?

G.D.: Yes. All of the lab members who took the course were happy with the content. At the end of the course we felt better equipped, and could see each technique’s potential and limitations... The visit to the Centre for Microscopy and Molecular Imaging that followed the course also gave us the opportunity to consider working with the CMMI on scientific projects.

WHAT ARE THE ADVANTAGES OF THE COURSES ON OFFER?

G.D.: I have only taken one, but a few of my employees have either already taken or plan to take other courses, especially the Flow Cytometry or Immunohistochemistry modules. The course content is always specific, well defined, up to date, and illustrated with examples and demonstrations of visits. The introduction to molecular imaging was the perfect addition to what our lab wants to do in cell therapy. CMMI and Biopark Training are definitely going about things the right way!

N.G.

Broaden or hone your skills during your PhD

Another of Biopark Training’s target audiences is PhD students. Last year Delphine Debuissou, a PhD student in the Immunobiology Laboratory (IBMM), completed a course in cytometry. For her, it was an opportunity to refresh her knowledge of the device: “I had already used a FACS a few times before, but I wanted to revise the theory behind it. What is good about this course is that the theory is illustrated by using the machine. We gained a real understanding of how it works, as well as what problems may arise and how to solve them. The course covered everything.” And the content of the course has proven useful outside of the classroom: “In our lab, we often make use of cytometry, as I do in my thesis, so the course was very useful to me. It also came recommended to me by other members of my lab who had already taken the course.” If you need another reason to take the course: it is free of charge for PhD students from Académie Universitaire Wallonie-Bruxelles, so there’s no excuse!

N.J.
In partnership with Forem and Cefochim, Biopark Training presents Biopoly and Biocel: two courses designed for jobseekers.

“Our contacts at Biopark Training go back a long way: we were a partner in the project submitted to the European Social Fund that resulted in the training centre being created”, recalls Jean-Nicolas Pecqueur, head of the Cefochim skills centre. The cooperation quickly developed into Biopark Training focusing on R&D roles, and Cefochim dedicated to biotech production.

“Aiming to organise all of the courses alone would be pointless and a waste of money, which is not what our political authorities expect of us. Life sciences is a broad field, and each centre develops its own area of activity, its own skills and teams, leading to interesting partnerships”, he explains, “In fact it makes it a lot easier if there is a mutual desire for cooperation.”

And this is how Cefochim came to provide several days of training on the Biopoly course, a four months course that aims to train versatile biotechnologists in the human health sector. It is also how Biopark Training and Cefochim came to jointly organise Biocel, the cell culture course. The course is certified by the BioWin competition cluster and financed by the Marshall Plan 2.Green, and in 2012 Biocel will take the form of two long courses: “R&D Lab”, organised by Biopark Training, and “Production”, coordinated by Cefochim. “Biopark Training and Cefochim enjoy a cooperative dynamic facilitated by both their complementary business sectors and their geographical proximity: 80% of Cefochim’s trainees live within 50km of Charleroi, and this reduced mobility must be taken in to account”, observes Jean-Nicolas Pecqueur.

Another natural choice of partner for Biopoly was Forem. “The biotechnology sector is a new sector that is recruiting heavily in the Charleroi region, where the Biopark has undergone rapid development over the past few years”, observes Georges Vanhauwaert, head of Forem Formation Charleroi. “Forem is always on the lookout for niche sectors that could employ jobseekers upon completion of a course. When Biopark Training asked us to help create a cross-disciplinary biotechnologies course for jobseekers, we jumped at the chance: Forem brings its knowledge of professional insertion and its training expertise in working with trainees with low levels of education or motivation, and Biopark Training provides its technical expertise. Biotechnologies, like engineering and electricity, are today’s drivers of employment in Charleroi. Forem needs to make these niches a priority and let go of the sectors which are no longer recruiting”.

Today, Biopoly and Biocel boast impressive job prospects for their graduates, with 80% of those completing the course finding a job. While the biotechnology sector is recruiting, there are still too few jobseekers in training due to a deficit in basic training, sometimes coupled with poor social skills. “Working in a lab requires good personal hygiene, and the ability to follow safety and quality standards, etc. We are currently looking into a foundation course for trainees to gain the prerequisite knowledge and skills before staring a course like Biopoly or Biocel”, Georges Vanhauwaert continues.
While the *Forem*’s priority is to get jobseekers back into work, it is also mindful of their future within the company. “Once they have found a job, the next step is to hold on to it! The biotech sector is always evolving, making training essential. This is why, together with Biopark Training and biotech companies, we are researching the best way to help employees adapt to change within the sector, retraining them if necessary”, Georges Vanhauwaert highlights.

*Nathalie Gobbe*

---

**ALAIN VAN BIERBEEK, PFIZER: “BUILDING TRUST”**

Industrial chemical engineer, qualified in organic synthesis, Alain Van Bierbeek completed the *Biopoly* course in 2010. Now aged 39, he works for Pfizer.

**WHAT DID YOU DO AFTER COMPLETING YOUR CROSS-DISCIPLINARY BIOTECHNOLOGY COURSE?**

*Alain Van Bierbeek*: I was an intern and then worked on a replacement contract at Henogen-Novasep until 31 March 2011. A few weeks before that, I had applied to an offer through Randstadt who were looking for a technical specialist for Pfizer in Louvain-la-Neuve. After the interview, they took me on! I started work at Pfizer at the beginning of April 2011, working in technology transfer for the production of new bioreactor antigens. I will soon be joining the R&D team to produce new bioreactor vaccines.

**DID YOUR EXPERIENCE AT BIOPARK TRAINING HELP YOU TO GET THIS JOB?**

*Alain Van Bierbeek*: Definitely! With Biopark Training I got my confidence back after a long period of unemployment: it gave me a new outlook, which is essential when looking for work. The course helped me to rediscover the world of industrial biopharmaceuticals, taking advantage of the concentration of companies on the Biopark to visit labs, meet company managers, and learn about the many job opportunities available to me... Biopark definitely opened my mind to the possibilities out there.

**AS WELL AS AN AWARENESS OF YOUR POTENTIAL, DO YOU USE THE SKILLS YOU ACQUIRED WITH BIOPARK TRAINING?**

*Alain Van Bierbeek*: Of course. I learned the culture techniques that I currently use during my course on the Biopark, and I then adapted them to Pfizer’s internal procedures and company culture. My versatility and motivation were without a doubt two of the deciding factors in getting the job, and they were gained on the course. When Valérie Hertveldt, the jobseekers training manager, asked me if she could visit Pfizer with group of students, I immediately offered to be their guide and whenever I see an opening within the company I inform her straight away: it’s great being able to give something back.

*N.G.*
Biopark Training’s motto is “meet the needs of every stakeholder in the Life Sciences sector”, and the training team is in regular contact with the business world!

“Our discussions with our partners are especially fruitful in discovering their training needs”, explains Arnaud Termonia, the Biopark Training Director. “Their individual requests evolve into company specific internal courses, but sometimes the needs they express may apply to a broader range of companies, so we try to design a core structure that is open to all. This is how the majority of our technical courses came in to being, as well as the new STRATEGIO programme, sponsored by UCB and GSK (see info box - ed.).” Biopark Training’s cooperation with industry is consolidated through seats on the steering committee occupied by industry stakeholders who play a genuine role in developing and adapting the programme. “In order to remain competitive, these businesses regularly maintain and develop the skills of their workforce”, adds Arnaud Termonia, “Our close collaboration with business enables us to build quality courses that adhere to the needs of the sector.”

**BEHIND A DESK AT BIOPARK TRAINING**

Over 30 companies have already sent their employees to attend classes at Biopark Training, 90% of which are from the biomedical and biotech sectors. GSK is one of the leaders of the biomedical sector in Belgium, and regularly calls upon Biopark Training to train its staff. “We were transferred to another unit last spring”, explains Sarah Scarnière, a GSK technician, “We had to use flow cytometry in our new role, something that we knew nothing about.” The small team of five was offered to sit a course at Biopark Training. “The two days course taught us about the technique, and we learned how the device worked”, she explains. “The link between the theory and practice was especially valuable to us.” Management were satisfied with the results and plan to send all of the team for training: “Our other colleagues have been using this technique for a while, but the course would still be useful to teach them the theory behind it”, concludes the technician.

In order to recruit qualified workers, a number of companies, as well as the Forem, serve on the steering committees of the Bioploy and Biocel programmes, specialist courses aimed at jobseekers. They also play a role in the courses provided in cutting edge technical skills that are available on the Biopark. An example of this is the imaging training cycle that has proven to be a great success even outside academic labs.

* Natacha Jordens
CAROLE MONTERRAT, PROMETHERA
“WE ARE ALWAYS WILLING TO TAKE
ON TRAINEES”

Promethera is a company specialised in the
development of cell therapy for liver disease,
and has just taken on four trainees from Biopark
Training. Carole Monterrat, Vice-President for
Resources, tells us more.

AS A BUSINESS LOCATED OUTSIDE THE BIOPARK, WHAT
CONNECTION DO YOU HAVE WITH BIOPARK TRAINING?

Carole Monterrat: When the Biocel course was created, Biopark Training asked
us to serve on the steering committee. Given that the aim of Biocel is to fulfil the
needs of companies in the cell therapy industry, it was a logical decision to get
involved in a course designed to meet our employment needs. We are based at
Mont-Saint-Guibert rather than on the Biopark, however, our location doesn’t
affect the aim of the course: if it suits us and the trainees are willing to travel then
we can have a mutually beneficial relationship.

YOU RECENTLY HIRED FOUR FORMER TRAINEES, COULD YOU TELL
US MORE ABOUT THIS DECISION?

Carole Monterrat: At the time, we were actively recruiting. Having the trainees at
the company for several weeks helped us make the decision. They showed that
they were able to do the job we were recruiting for. Each candidate has his own
skill set, but the course is very well suited to our needs and gives them the edge.

DO YOU PLAN TO CONTINUE WORKING WITH BIOPARK TRAINING?

Carole Monterrat: I am still involved in the Biocel project, as well as in others
where I can make a real contribution. Furthermore, Promethera will always be
willing to take on trainees (an experience that we repeated this summer) and to
hire them if the time is right.

S.R.

CÉCILE NANBRU, HAUTE ECOLE HEPH-
CONDORCET IN ATH “THE COURSE
MADE ME WANT TO WORK IN CELL
CULTURE AGAIN”

WHY TAKE A BIOPARK TRAINING COURSE?

Cécile Nanbru: In general, as a member of teaching
staff at a Haute Ecole you often have to get things together
yourself if you want to introduce a new class (books, professional
and personal experiences, websites, contacts with industry
professionals, etc.), and we are not always trained in the subject
of the class during our time at university! The courses offered by
Biopark Training act as an effective introduction to new courses,
for both theory or practical. Biotechnology has also undergone a
lot of changes in recent years, and the classes we give need to
be brought up to date. The course is also a good opportunity to
meet teaching staff from other institutions and share professional
experiences.

HAVE YOU DEVELOPED THESE TRAININGS IN PRACTICE?

Cécile Nanbru: If I remember correctly, I have taken three courses in
the Biopark. The first was about flow cytometry. This course refreshed
my knowledge of forgotten devices, but it also gave me an opportunity
to try out machines that I had never used before in my career. The
second course was about optical microscopy, and refreshed my
knowledge of microscope theory in general, as well as broadening
my knowledge of the field by introducing me to two new kinds of
microscope. I also took part in the Summer School for teaching staff
as part of the Biocel course. During the three days course the trainer,
Béatrice Goxe, brought us up to date on cell culture by emphasizing
its use in biopharmaceutical production. When I was working on my
thesis from 1994 to 2000, I worked in this field but it had moved on a
lot since then: this course made me want to work in cell culture again,
and to include it in my classes.

S.R.
The trypanosoma parasite (shown here in blue among the red blood cells), which causes sleeping sickness, knows all about sacrifice: in the early stages of infection the parasites killed by macrophages release cyclic AMP, a molecule that inhibits production of inflammatory agents used by the macrophages! This sacrifice lets other trypanosomes bypass the innate immune response and successfully infect the host. The Molecular Parasitology Laboratory (IBMM) - Etienne Pays - published these results in the June issue of Science, in partnership with the CMMI, who produced these spectacular images, in cover of Science.

N.J.
“There is a real opening on the Belgian market for remote patient monitoring”

Founded in January 2012, CareSquare moved in to Biopark Incubator 2 in March. Their first product, “Compagnon Digital” is currently undergoing testing and its official release date is rapidly approaching. Here we meet Sébastien Rousseaux, the CEO, who will tell us more about this start-up.

CARESQUARE IS A NEW COMPANY, EVEN THOUGH THE PROJECT FIRST BEGAN 5 YEARS AGO.
It all began in 2007 with the European OLDES project. The goal was to develop innovative technological solutions to improve the quality of life of the elderly. I was managing the project at CETIC (Centre of Excellence in Information and Communication Technologies), where I coordinated the design and evaluation of the first “Compagnon Digital” prototypes (see box).

DID YOU DECIDE TO LAUNCH YOUR OWN COMPANY WHEN THIS PROJECT ENDED?
Yes. We noticed that there was a very real opportunity on the Belgian market for this type of interface. We secured the support of the European Regional Development Fund (ERDF) to try out this type of system in Région Wallonne. Our experience in the field and our contacts and partners within the Région Wallonne enabled us to create CareSquare in January. The first devices will be sold from mid-September this year.

TELL US ABOUT HOW THE COMPANY IS FUNDED, BEING OPEN TO INDIVIDUAL INVESTORS...
In addition to our main shareholders (CETIC, Bizzdev, Idealy) and the capital fronted by the management, we have opened 2.5% of the capital to CETIC employees internally. We used “My First Company” (an online platform for organising funding for start-ups; ed) to structure the secure entry of these private shareholders into CareSquare’s capital.

WHY CHOOSE THE BIOPARK?
By setting-up shop in the Biopark we don’t stray far from the CETIC, which is still involved in the project. It also places us in close proximity to other ERDF project partners, especially ImmuneHealth, who validate the readings taken by digital companion. All in all, Biopark Incubator 2 has provided us with a lot of services that are useful to a new company.

Natacha Jordens

COMPAGNON DIGITAL

The first CareSquare product makes use of a computer interface to improve the quality of life for outpatients at home. The system, which has been named the “compagnon digital”, uses wireless devices to monitor the patient’s medical condition (sphygmomanometer, weight scales, blood sugar tester, pulse oximeter, etc.). The care team has remote access to this data and can observe the changes to the patient’s health indicators over time, and receive automatic alerts if these indicators change. The system includes entertainment services (games, simplified internet browser), as well as organising and communication functions (diary, home orders and deliveries, family email contacts, Skype, etc.) adapted to senior citizens.

N.J.
AIDS: progress made at IBMM

The IBMM’s Molecular Virology Laboratory, under the leadership of Carine Van Lint, has set out on an innovative line of research into the strategies designed to eradicate, or at least control, the AIDS virus.

July saw the 19th International AIDS Conference held in Washington DC, which was the occasion chosen by Nature Reviews Immunology to publish the recommendations resulting from work carried out by the International AIDS Society (IAS), a group of 34 scientists and doctors chaired by Françoise Barré-Sinoussi (Nobel Prize for Medicine 2008). The recommendations define a comprehensive scientific strategy to target persistent HIV-1 reservoirs.

This is one of today’s major problems: while anti-AIDS combination therapy can improve patients’ life expectancy and quality of life, reservoirs of infected cells are not fully eradicated. Even when it can no longer be detected, the virus remains, ready to reactivate if the patient stops treatment.

Carine Van Lint heads the Molecular Virology Laboratory at the IBMM, and is the only Belgian involved in the IAS. She works on two of the group’s seven priority areas of research: determining the cellular and viral mechanisms that play a role in establishing and maintaining HIV-1 reservoirs; and developing and testing treatment strategies to eliminate latent reservoirs of the virus.

The IBMM lab has also made another advancement which was published at the end of July in the AIDS journal: led by Carine Van Lint and in partnership with CHU Saint-Pierre (Stéphane De Wit and Nathan Clumeck) and several French labs, the scientists proved that a class of molecules known as histone methyltransferase inhibitors (enzymes that suppress the expression of HIV-1) can reactivate expression of the virus ex vivo in the cell reservoirs of patients receiving antiretrovirals.

How can this knowledge be applied? By reactivating the virus in these dormant cells. ULB scientists caused the virus to multiply, making the infected cells detectable by the immune system that then destroys them. The team has been working on blood samples taken from around 50 patients undergoing treatment, and whose viral load has been undetectable for at least one year. The research shows that histone methyltransferase inhibitors are able to reactivate the virus in the cell reservoir, and the IBMM lab has therefore opened up an innovative new avenue of research to better control the AIDS virus.

Carried out with support from the ANRS (French National Agency for Research on AIDS and Viral Hepatitis), the FNRS and the Région Wallonne, the research will continue over the coming months. Carine Van Lint’s team will continue to study the molecular mechanisms that control the persistence of the HIV-1 virus in order to find new ways to reactivate the viral expression, and to combine them with histone methyltransferase inhibitors. The team will also endeavour to understand why the HIV-1 virus does not reactivate in all of the patients’ blood samples, as well as work on predictive clinical testing.

Nathalie Gobbe