

### Yasmine Driege

technician  
VIB Department for Molecular Biomedical Research, UGent (since 2008)

After my graduation, I went to work in London at the Institute of Healthy Ageing, University College. Although this was a very special experience for me, there came a time when I wanted to return to Flanders. On the advice of Bart Vanhaesebrouck, who did his doctoral research in the lab of Walter Fiers, I came to VIB.

I love working in an academic setting. As a lab technician I can be intimately involved in the research, much more so, I think, than at a private company. The large number of customized trainings is a real plus.

### Peter Fraisl

senior scientist  
VIB Vesalius Research Center, KU Leuven (since May 2011)

While working at the Medical University of Vienna, I was invited to join the lab of Salvador Moncada.

Doing research at VIB has two main advantages in my mind: first there is the intellectual and competitive environment it provides, and then there is the role it plays in communicating the importance of the life sciences to politicians and the public in order to build support for biotech research and its applications. Consequently, the Flemish Government rewards VIB with extensive financial support and thus provides long-term prospects and job security to its staff, of which I am a proud member.

### Eric Patteet

senior staff employee  
VIB Department of Molecular Genetics, University of Antwerp (since 2000)

The number of staff doubled and budgets multiplied. I also saw the competitiveness of the departments and research groups grow. Such a competitive environment keeps scientists on their toes and lifts the level of the science. On the other hand, it should be said that the competitive aspect sometimes also makes collaboration within VIB harder.

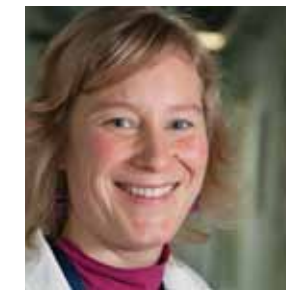
I knew immediately I wanted this job. Working in this youthful, international research environment continues to be a delight.

### Rita Pancsa

PhD student  
VIB Department of Structural Biology, Vrije Universiteit Brussel (since July 2011)

Already during my undergraduate studies I knew I wanted to do a PhD in the lab of Peter Tompa. At that time Peter was working at the Institute of Enzymology in Budapest and his research in the field of intrinsically disordered proteins really fascinated me. When Peter moved to Brussels to become department director, he invited me to come to his lab, I accepted immediately!

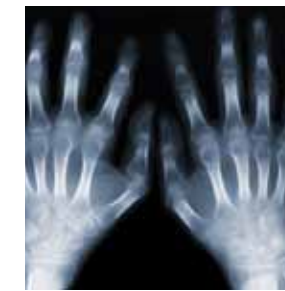
I was the fifth person to join his lab and with the help of my colleagues it was quite easy to integrate. I attended '15 years VIB', which was a first for me: I never before had been at a one-day symposium with so many big shots.



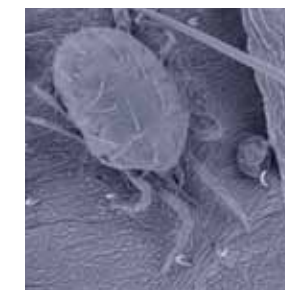
FROM TOP TO BOTTOM  
Yasmine Driege  
Peter Fraisl  
Eric Patteet  
Rita Pancsa  
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## World-Class Science

18 contributions to *Nature*, *Cell* and *Science* confirm VIB's chosen path and illustrate the effect of our continued investments in an outstanding research environment.



In a paper in *Nature Genetics*, Rudi Beyaert and his team describe how a defect in the expression of the *Aso* gene (TNFAIP3) may contribute to the appearance of rheumatoid arthritis in mice. Consequently, the scientists consider *Aso* to be an important target for the development of new therapeutic drugs.  
MATMATI ET AL., NAT GENET 2011

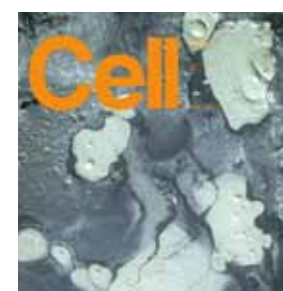


The team of Yves Van de Peer was part of an international team that cracked the spider mite genome. This is the first arachnid genome to be sequenced. Not only does this scoop provide new insights into the evolution of arthropods, but it also offers new opportunities for developing crop protectants against spider mites.  
GRBIC ET AL., NATURE 2011



Researchers from the team of Dirk Inzé have developed a new strategy for increasing crop resistance to drought. This property may help farmers during longer drought periods. Lower precipitation levels often result in smaller harvests.  
SKRYCZ ET AL., NAT BIOTECHNOL 2011

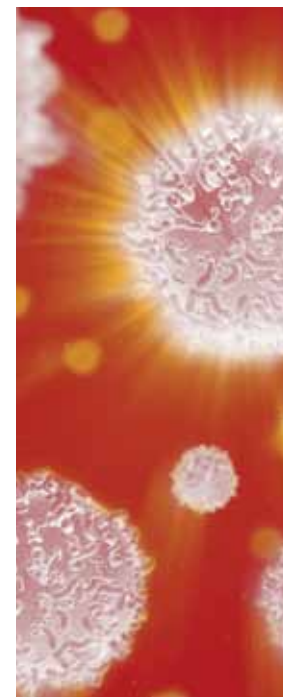
Plants are known for their continued growth and adaptation of the plant architecture to the environment. Hormones seem to play a major role in this. Research by Eva Benková and her team led to new insights in the way in which cytokinin hormone directs organ development.  
MARHAVY ET AL., DEV CELL 2011



Erroneous communication between neurons may result in brain disorders such as Parkinson. The lab of Patrik Verstreken has discovered the mechanism that ensures that neurons can continue to transmit the correct signals for extended periods. The enzyme that controls this subtle balance in communication is called Skywalker.  
UYTTERHOEVEN ET AL., CELL 2011



Cancer can be caused by protein aggregation. This was demonstrated by a study at the lab of Frederic Rousseau and Joost Schymkowitz. Protein deposits, which are best known for their role in Alzheimer's disease, also seem to play a role in one sixth of all cancer cases.  
XU ET AL., NAT CHEM BIOL 2011



The team of Peter Carmeliet investigated the role of placental growth factor (PlGF) in mice with chronic myeloid leukemia (CML). Blocking this growth factor increased the life expectancy of mice, even in those that were resistant to the drug imatinib.  
SCHMIDT ET AL., CANCER CELL 2011

The accumulation of plaque in blood vessels may lead to a heart attack or stroke. Restoring blood flow as quickly as possible to minimize damage is a challenge. Massimiliano Mazzone and his team discovered that blocking PhD2 protein in white blood cells speeds up the maturation of new blood vessels.  
TAKEDA ET AL., NATURE 2011



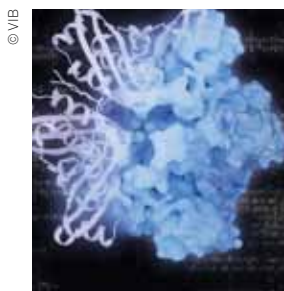
The intestinal systems of human beings belong to one of three distinct types of intestinal flora, similar to blood groups. These types are independent of race, country of origin or eating habits. Those are the findings of a metagenomics study conducted by an international consortium of researchers that included VIB scientist Jeroen Raes.  
ARUMUGAM ET AL., NATURE 2011



On May 15, VIB launched a new international postdoc program named omics@vib. The purpose of the EC support program is attracting international postdocs who will accelerate the introduction of an 'integrative biology' approach in VIB labs. The first call produced six omics@vib fellows.



After an exhausting but extremely positive five-year review, VIB received an excellent report card from various peer groups, review boards, consultants and analysts. The result: a new five-year Management Agreement (2012-2016) that pledges annual funding of M€ 43.8. A deal good for almost M€ 20.



Proteomics is an important technology for mapping protein profiles of biological systems qualitatively and quantitatively. But quantitative results obtained via various algorithms only provide partial overlaps. The team of Lennart Martens has therefore developed software that enhances the sensitivity of quantitative proteomic datasets by combining several algorithms.  
COLAERT ET AL., NAT METHODS 2011



Charcot-Marie-Tooth disease (CMT) leads to muscle weakness in the lower legs, feet and hands. To date there is not a single support treatment or cure for the disease. The lab of Wim Robberecht has identified a certain substance as a possible drug for CMT.  
D'YDEWALLE ET AL., NAT MED 2011

The research group of Christine Van Broeckhoven demonstrated that a frequently occurring pathogenic GGGGCC expansion mutation in *C9orf72* causes amyotrophic lateral sclerosis and frontotemporal dementia. These findings will make it possible to produce a more precise diagnosis of both these fatal neurodegenerative disorders.  
GIJSELINCK & CRUTS ET AL., LANCET NEUROLOGY 2011



- 1 Jo Bury *managing director*
  - 2 Rudy Dekeyser *managing director*
  - 3 Hugo Van Heuverswyn *chairman of the Board*
- © VIB

By adding 10% to VIB's core funding, the Flemish Government raises its bet on biotechnology as the engine of the knowledge society. VIB's 2012-2016 strategic plan now has the wind at its back.

In 2011 we looked both forward and back. It was the year of our quinquennial review, when the Flemish Government, aided by a panel of consultants and peer reviewers, turned the activities of our various departments and groups inside out, forcing us to look back. Many valuable lessons came out of both the preparation and results of last year's evaluation. It helped us hone in on what should be VIB's main research themes, which technologies to acquire and what kind of researchers to attract.

The arrival of two new department directors has clearly strengthened VIB's scientific focus. Peter Tompa, one of the scientists who laid the groundwork for research on intrinsically disordered proteins, is developing the VIB Department of Structural Biology at Vrije Universiteit Brussel. At UGent, Bart Lambrecht, the new director of the VIB Department for Molecular Biomedical Research, plans to put 'inflammation' front and center while boosting collaboration on translational research between VIB scientists and the university hospital. We also welcomed ten new research groups last year.

Besides recruiting new and promising scientists, VIB focuses on making new - including emerging - technologies available. During the past year, we invested heavily in new microscopy technologies for visualizing biological processes and are now in the midst of developing a bioimaging core facility. We also continued to invest in the efficient storage and processing of the enormous quantities of data produced by our experiments and in scouting out new technologies via the VIB Tech Watch program.

The importance VIB attaches to investing in people and technology is clearly illustrated by our omics@vib. Partially financed by the European Commission via the Marie Curie

FP7 People Cofund, the program recruits 20 post-docs from around the world who are specialists in integrative biology. This means that they combine a holistic approach to biological research (genomics, proteomics, transcriptomics) with in-depth analysis and bring this combination into the lab.

To let research results flow through to patients and consumers, VIB develops a patent portfolio and works with commercial partners. In 2011, we filed a record number of new patent applications as well as signed a record number of agreements with domestic and international companies. Our partners started four new clinical trials with candidate medications based on VIB research, introduced new diagnostic tests on the market and tested a number of improved crops in the field. With Q-Biologicals we set up our twelfth startup. Together VIB startups now employ more than 500 people, while total investment in them has reached M€ 467.

Last year we also looked back at VIB's fifteen years of existence. From a relatively limited organization we have grown into a community of 1,300 driven, talented scientists, technologists and support personnel who deliver top quality work according to the conclusion of the Flemish Government. At the celebration of our 15th anniversary, Flemish Minister of Innovation Ingrid Lieten announced that VIB's subsidy was to increase by 10%, to M€ 43.8 a year. This proves the government's trust in biotechnology as the motor of the knowledge society. We have every reason to look to the future with confidence.

Jo Bury  
Rudy Dekeyser  
Hugo Van Heuverswyn



VIB is a non-profit research institute in life sciences. About 1,300 scientists conduct strategic basic research on the molecular mechanisms that are responsible for the functioning of the human body, plants, and microorganisms.

Through a close partnership with four Flemish universities – UGent, KU Leuven, University of Antwerp, and Vrije Universiteit Brussel – and a solid funding program, VIB unites the forces of 72 research groups in a single institute. The goal of the research is to extend the boundaries of our knowledge of life profoundly. Through its technology transfer activities, VIB wants to convert research results into products for the benefit of consumers and patients.

VIB develops and disseminates a wide range of scientifically substantiated information about all aspects of biotechnology. More information: [www.vib.be](http://www.vib.be)

## On their way to patients and consumers

In 2011, VIB researchers reported 73 inventions. These are the basis for the development of novel candidate diagnostics, therapies, improved crops and new food products. VIB signs partnerships with existing companies and establishes new companies to translate its inventions into real life products.

### VIB's patent portfolio continues to grow

In 2011, 34 priority applications were filed. By the end of the year, the patent portfolio contained 154 active patent families managed by VIB, which transferred 29 other patent families to startups and other companies.

### Another record number of commercial agreements

For the fifth year in a row, VIB signed a record number of commercial agreements. In 2011, this added up to 124 R&D and licensing agreements. On an annual basis, this is the highest number since VIB's inception, bringing the total number of agreements to 901. Half of these agreements involve companies located in Flanders. VIB's partners range from (bio)pharma to agrobiotech and food processing companies, and from SMEs to multinationals. Our tech transfer activities generated over M€ 15 in business revenues in 2011. Except for 2008, this is the best result since VIB's inception.

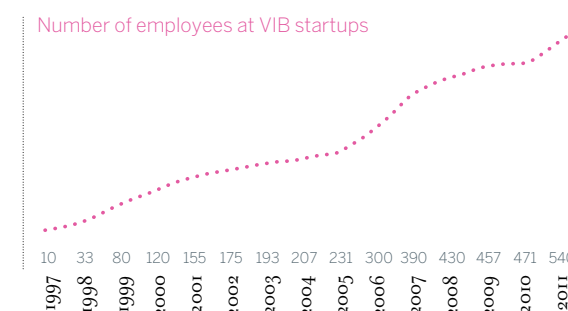
### M€ 470 capital in VIB startups

One of VIB's mandates is creating new biotech companies. In 2011, Multiplicom (started in 2010) was converted into a 'true' company. With the help of Gimv, the University of Antwerp and VIB's seed money fund, M€ 2 in capital was invested in Multiplicom and experienced management recruited.

In 2011, Q-Biologicals was set up as a startup of VIB and UGent. This company combines the expertise of VIB in the field of protein production and purification with the experience of ex-Innogenetics entrepreneurs in the same field. The same amount of M€ 2 was also invested in Q-Biologicals (by PMV, Life Sciences Research Partners, the VIB seed money fund and SOFI).

VIB's 12 startups have attracted M€ 470 in capital to date. This means that for every euro invested via the subsidy of the Flemish Government in VIB research, more than one euro was invested by private investors in VIB startups.

Another important objective of tech transfer at VIB is creating new jobs. In 2011, VIB startups provided employment for more than 500 people.



### Foreign companies strengthen biotech cluster

In part thanks to VIB's efforts, arGEN-X and Biocartis transferred a significant share of their R&D activities to Flanders. Both companies exceeded the expectations, respectively attracting M€ 27.5 and M€ 71 of additional capital in 2011. It seems that investing in attracting outstanding biotech companies to Flanders generates an excellent return in additional investments and jobs.

Product / indication	Research	Preclinical	Phase I	II	III	Market
Nanobody® / thrombosis	.....	.....	.....	.....	.....	.....
Nanobody® / TTP	.....	.....	.....	.....	.....	.....
Nanobody® / rheumatoid arthritis	.....	.....	.....	.....	.....	.....
Lactococcus / colitis	.....	.....	.....	.....	.....	.....
Lactococcus / mucositis	.....	.....	.....	.....	.....	.....
Anti-PLGF / safety	.....	.....	.....	.....	.....	.....
Vaccin / influenza	.....	.....	.....	.....	.....	.....
ALS protein therapy	.....	.....	.....	.....	.....	.....
Lactococcus / Crohn's disease	.....	.....	.....	.....	.....	.....
Nanobody® / osteoporosis	.....	.....	.....	.....	.....	.....
Nanobody® / rheumatoid arthritis	.....	.....	.....	.....	.....	.....
Anti-PIGF / brain tumor	.....	.....	.....	.....	.....	.....
Anti-PIGF / liver tumor	.....	.....	.....	.....	.....	.....
Nanobody® / SC mobilization	.....	.....	.....	.....	.....	.....
Nanobody® / RSV infection	.....	.....	.....	.....	.....	..... License
Nanobody® / IL6R	.....	.....	.....	.....	.....	..... License

### Sixteen candidate drugs on their way to patients

In 2011, four new clinical trials were started with candidate therapeutics derived from VIB research, bringing the total number of initiated trials to 16. Drugs are being developed for the treatment of patients with cancer, infectious diseases, lung diseases, inflammatory illnesses, cardiovascular conditions and neurodegenerative disorders.

### VIB research also underlies five diagnostic tests already on the market

Multiplicom, a startup of VIB and the University of Antwerp, introduced two new tests in 2011 for detecting increased risk for two types of colon cancer. Counting the tests for detecting increased risk for cystic fibrosis and breast cancer, Multiplicom is now commercializing four tests based on a technology developed at VIB. A fifth test based on VIB research is currently being sold by Abbott for the detection of certain types of stomach tumors.

Pronota, another startup of VIB and UGent, took great strides in the development of diagnostic tests for the detection of pre-eclampsia, sepsis and ovarian cancer. To get the tests ready for market, they are now being validated on large patient cohorts.

### The green pipeline

VIB has partnership agreements with numerous companies from the green biotech sector, including Bayer CropScience and BASF Plant Science, two of the five top agrobiotech companies in the world. These partnerships have produced, for instance, plant varieties with increased yields and greater resistance to drought and other stresses. A growing number of these innovative crops are

Product/application	Discovery/Model	Field	Market
Stress resistance (PARP, cotton)	.....	.....	.....
Increase yield (rice)	.....	.....	.....
Drought tolerance (rice)	.....	.....	.....
Nitrogen use efficiency (rice)	.....	.....	.....
Lignin content (CCR, poplar)	.....	.....	..... VIB
Enabling technology	.....	.....	..... License
Plant growth regulators	.....	.....	..... Startup

Product/indication	Research	Clinical Validation	Market
Molec. diagn. MALT lymphoma	.....	.....	.....
Molec. diagn. breast cancer	.....	.....	.....
Molec. diagn. cystic fibrosis	.....	.....	.....
Molec. diagn. colon cancer	.....	.....	.....
Molec. diagn. colon cancer	.....	.....	.....
Protein marker pre-eclampsia	.....	.....	..... License
Protein biomarker ovarian cancer	.....	.....	..... License
Protein biomarker sepsis	.....	.....	..... Startup

now being evaluated in field tests.

### Purely Belgian

Belgium is still the land of beer and chocolate. Not surprising then that VIB is in partnership with several breweries and chocolate makers. In a playful collaboration with De Kale Ridders, VIB researchers developed a yeast strain that is used in the production of a very tasty reception beer.

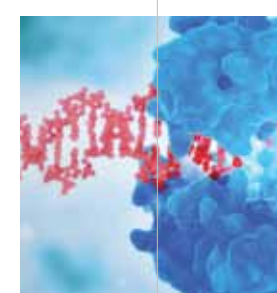
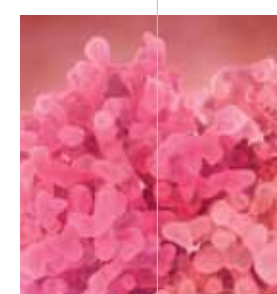
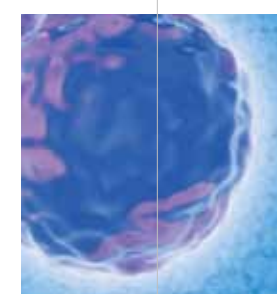
### Infrastructure for biotech companies

By investing as well as partnering with academic, financial and industrial partners, VIB is able to provide an extensive network of suitable biotech infrastructure to young, growing, domestic and foreign companies in the life sciences sector.

At the end of 2011, it was decided to expand the Bio-Accelerator by 10,000 m<sup>2</sup>.

The first 4,000 m<sup>2</sup> expansion of the bio-incubator in Leuven was as good as ready to be used by the end of 2011 and a second 4,000 m<sup>2</sup> expansion was roughed in.

The twenty or so biotech companies housed in the bio-incubators and the Bio-Accelerator employed more than 500 people by the end of 2011.



## Financial Statements 2011

### Balance Sheet (€ thousands)

	31.12.2011	31.12.2010
<b>ASSETS</b>		
INTANGIBLE FIXED ASSETS	1.419	1.755
TANGIBLE FIXED ASSETS	27.758	28.840
FINANCIAL FIXED ASSETS	8.839	7.693
CONTRACTS IN PROGRESS	10.992	11.679
AMOUNTS RECEIVABLE WITHIN ONE YEAR	10.663	9.020
INVESTMENTS	78.288	72.715
CASH AT BANK AND IN HAND	1.420	215
DEFERRED CHARGES	6.919	5.374
<b>TOTAL ASSETS</b>	<b>146.298</b>	<b>157.291</b>
<b>LIABILITIES</b>		
ALLOCATED FUNDS	53.769	50.562
INVESTMENT GRANTS	21.952	22.407
AMOUNTS PAYABLE AFTER ONE YEAR	9.044	9.511
AMOUNTS PAYABLE WITHIN ONE YEAR	41.347	34.856
ACCRUED CHARGES AND DEFERRED INCOME	20.186	19.955
<b>TOTAL LIABILITIES</b>	<b>146.298</b>	<b>157.291</b>

### Profit and Loss Statement (€ thousands)

	2011	2010
<b>OPERATING INCOME</b>	<b>70.516</b>	<b>68.513</b>
TURNOVER (FROM CONTRACT RESEARCH)	17.747	14.455
CONTRACTS IN PROGRESS (+/-)	-687	3.021
GRANTS AND SUBSIDIES	51.723	50.495
OTHER INCOME	1.733	542
<b>OPERATING EXPENSES</b>	<b>-69.218</b>	<b>-66.463</b>
RAW MATERIALS AND CONSUMABLES	-6.695	-7.190
SERVICES AND OTHER GOODS	-18.742	-17.602
REMUNERATION, SOCIAL SECURITY COSTS AND PENSIONS	-35.940	-34.469
DEPRECIATION	-6.689	-6.578
OTHER OPERATING EXPENDITURES	-1.152	-624
<b>FINANCIAL INCOME</b>	<b>1.215</b>	<b>649</b>
<b>FINANCIAL CHARGES</b>	<b>-719</b>	<b>-500</b>
<b>EXTRAORDINARY INCOME</b>	<b>2.290</b>	<b>1.761</b>
<b>EXTRAORDINARY EXPENDITURE</b>	<b>-877</b>	<b>0</b>
<b>PROFIT/LOSS FOR THE FINANCIAL YEAR</b>	<b>3.207</b>	<b>3.960</b>

## Good Governance

On April 16, 2008, the Good Governance Charter proposed by the Board of Directors was adopted by VIB's Annual General Meeting. Now in effect, the Charter's complete text can be viewed on VIB's website ([www.vib.be](http://www.vib.be)).

VIB plans to review and update its good governance principles regularly in the light of local and international developments and to meet the needs of the stakeholders in the non-profit corporation.

## Structure VIB

VIB is a non-profit research institute, financed by the Flemish Government, with scientists at the UGent, KU Leuven, University of Antwerp and Vrije Universiteit Brussel.

### Ghent

- VIB Headquarters
- VIB Department of Medical Protein Research, UGent
- VIB Department of Molecular Biomedical Research, UGent
- VIB Department of Plant Systems Biology, UGent
- VIB Proteomics Expertise Center, UGent (PEC)
- VIB Bioinformatics Training and Service Facility (BITS)
- VIB Compound Screening Facility, UGent (CSF)
- VIB Protein Service Facility, UGent (PSF)
- VIB Bio-incubator

### Leuven

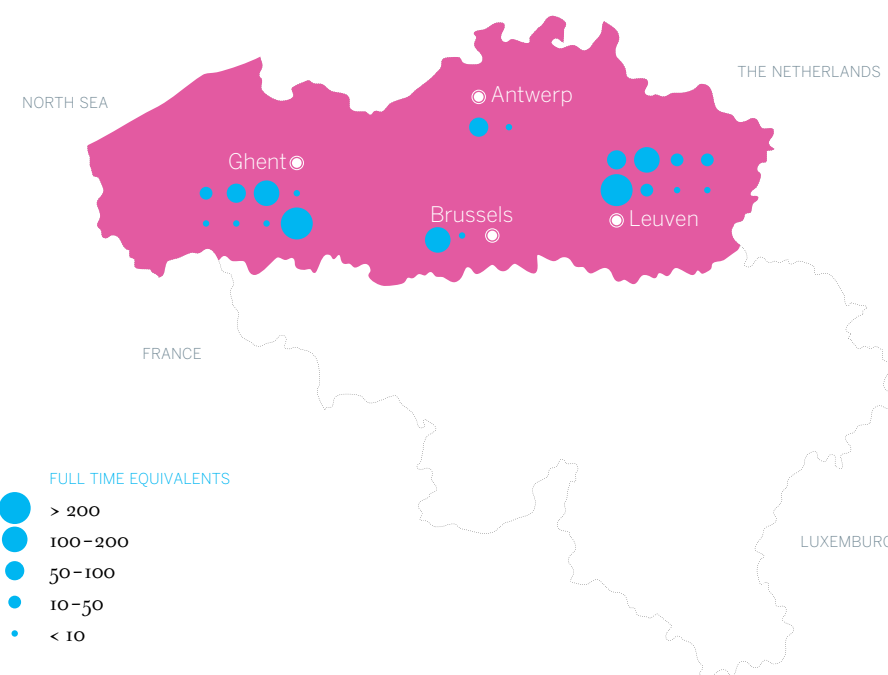
- VIB Department of Molecular Microbiology, KU Leuven
- VIB Center for the Biology of Disease, KU Leuven
- VIB Vesalius Research Center, KU Leuven
- VIB Switch Laboratory, KU Leuven
- VIB Laboratory of Systems Biology, KU Leuven
- Neuro-Electronics Research Flanders, VIB, Imec, KU Leuven
- VIB Autoimmune Genetics Laboratory, KU Leuven
- VIB Nuclomics Core

### Antwerp

- VIB Department of Molecular Genetics, University of Antwerp
- VIB Genetic Service Facility, University of Antwerp (GSF)

### Brussels

- VIB Department of Structural Biology, Vrije Universiteit Brussel
- VIB Nanobody Service Facility, Vrije Universiteit Brussel (NSF)



VIB is a life sciences research institute, based in Flanders, Belgium. We perform basic research with a strong focus on translating scientific results into pharmaceutical, agricultural and industrial applications



synopsis  
Annual Report 2012  
VIB ACTIVITIES IN 2011

