

ANNUAL REPORT 2015

VICE RECTORATE INNOVATE
VRIJE UNIVERSITEIT BRUSSEL

- CONNECTING SCIENCE AND SOCIETY -



VUB TECHTRANSFER: UNIQUE ENTRY POINT AND VITAL LINK BETWEEN THE
UNIVERSITY'S RESEARCH-EXPERTISE AND INDUSTRY-SOCIETY

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REINFORCING COOPERATION WITH INDUSTRY AND BUSINESS

Beginning academic year 2015-2016 creation of a vicerectorate
Innovate at VUB with the multidisciplinary VUB TechTransfer as operational support team.

FIGURES 2015



3 CAMPUSES

- campus Etterbeek
- campus Kaai Anderlecht
- health campus Jette near university hospital UZ Brussel

8 FACULTIES

3.282 
 EMPLOYEES

14.000 
STUDENTS 

3.524 
EMPLOYEES UZ BRUSSEL

1.500 
 DOCTORANDI

2.182 ACADEMIC
AND SCIENTIFIC PERSONNEL

166 
RESEARCH GROUPS

 **13.5 mio**
REVENUE FROM CONTRACT RESEARCH WITH
INDUSTRY AND VALORISATION OF RESEARCH

"The "grand challenges" of the 21st century are necessarily multidisciplinary and require fundamental, strategic and applied research. Research and innovation go hand in hand. It distinguishes us and makes the university a unique place."

Caroline Pauwels, Rector Vrije Universiteit Brussel, 2016-2020



"The interaction university-industry contributes to the innovative performance of companies and thus to the competitiveness of a region or country."

Paul De Knop, Rector Vrije Universiteit Brussel, 2008-2016

CONNECTING SCIENCE AND SOCIETY

VUB, innovation center in the heart of Brussels

Vrije Universiteit Brussel is a Flemish university known for its high level education and independent research. It is situated in Brussels, the heart of Europe, international decision center and talent pool.

VUB counts 14.000 students and 3 campuses: its main campus with 7 faculties in Etterbeek, campus Kaai in Anderlecht and the medical campus in Jette, next to the university hospital UZ Brussel. VUB employs 3.282 people, including 2.182 academic and scientific members. Another 3.524 work at UZ Brussel.

166 research groups perform research with a strong motivation to positively impact society and enable technological innovation.

Reinforcing cooperation with industry and business

The university has ongoing research collaborations with a broad network of high-level partners both in Belgium and abroad, including collaborative projects with industrial partners, bilaterally or supported by government subsidies from Flanders, Brussels and Europe. In order to develop even more the relationship with the business world and the industry, VUB has created a vice rectorate Innovate in 2015, under the academic supervision of vice rector prof. Hugo Thienpont.

VUB TechTransfer

VUB TechTransfer is the multidisciplinary team of the vice rectorate Innovate. It supports the research groups of all faculties and UZ Brussel in valorising their knowledge, discoveries and technologies towards the whole society and industry. Companies that are looking for innovative and future-oriented solutions, knowledge and expertise developed at VUB can appeal to VUB TechTransfer. Crosstalks, the VUB academic and corporate exchange platform, and VUB Foundation, a strategic component that is responsible for all fundraising to invest in the future of research and education, are strategic partners of VUB TechTransfer.

Today's innovations for a better tomorrow

In 2015 revenue from contract research with industry and valorisation of research resulted in 13.5 mio euro. But valorisation of research results not only means bringing them to the market or obtaining a financial return, which is partly reinvested in research. Researchers are passionate people focusing on how to improve existing technologies and knowledge in order to get a more ecological, healthier and better functioning world. In this first Annual Report of VUB Innovate we are proud to present the 2015 valorisation results of the VUB. We invite you to discover strategic tools, innovative projects, collaborations with industry, spin-offs and much more. To have a quick overview, just scroll through the left pages of this booklet. On the right pages everything is explained more in detail.

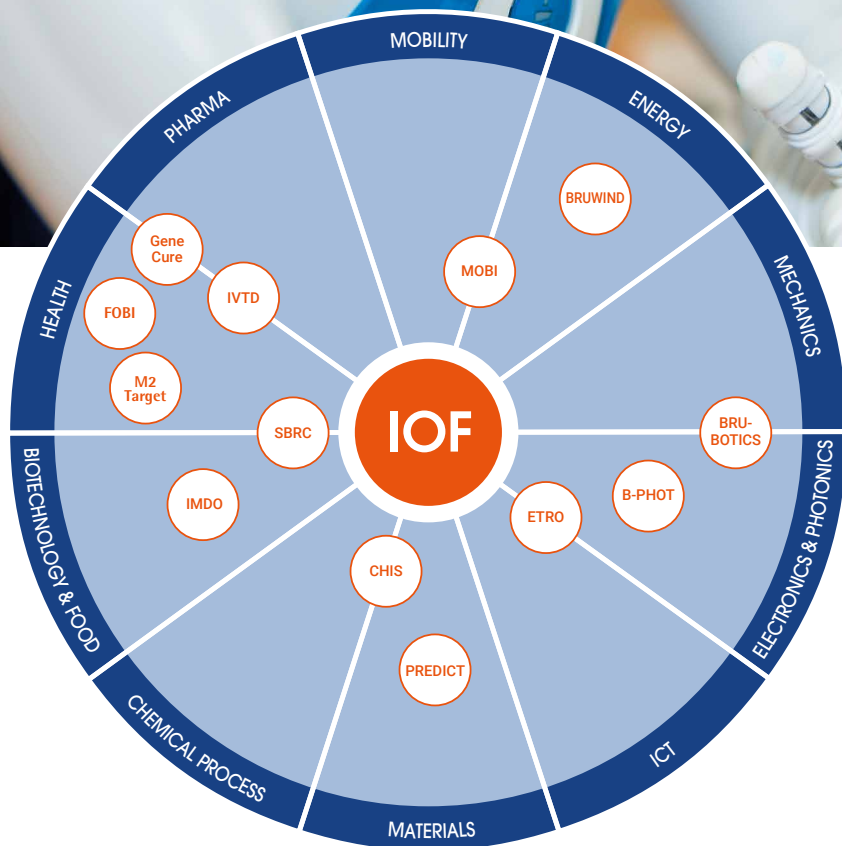
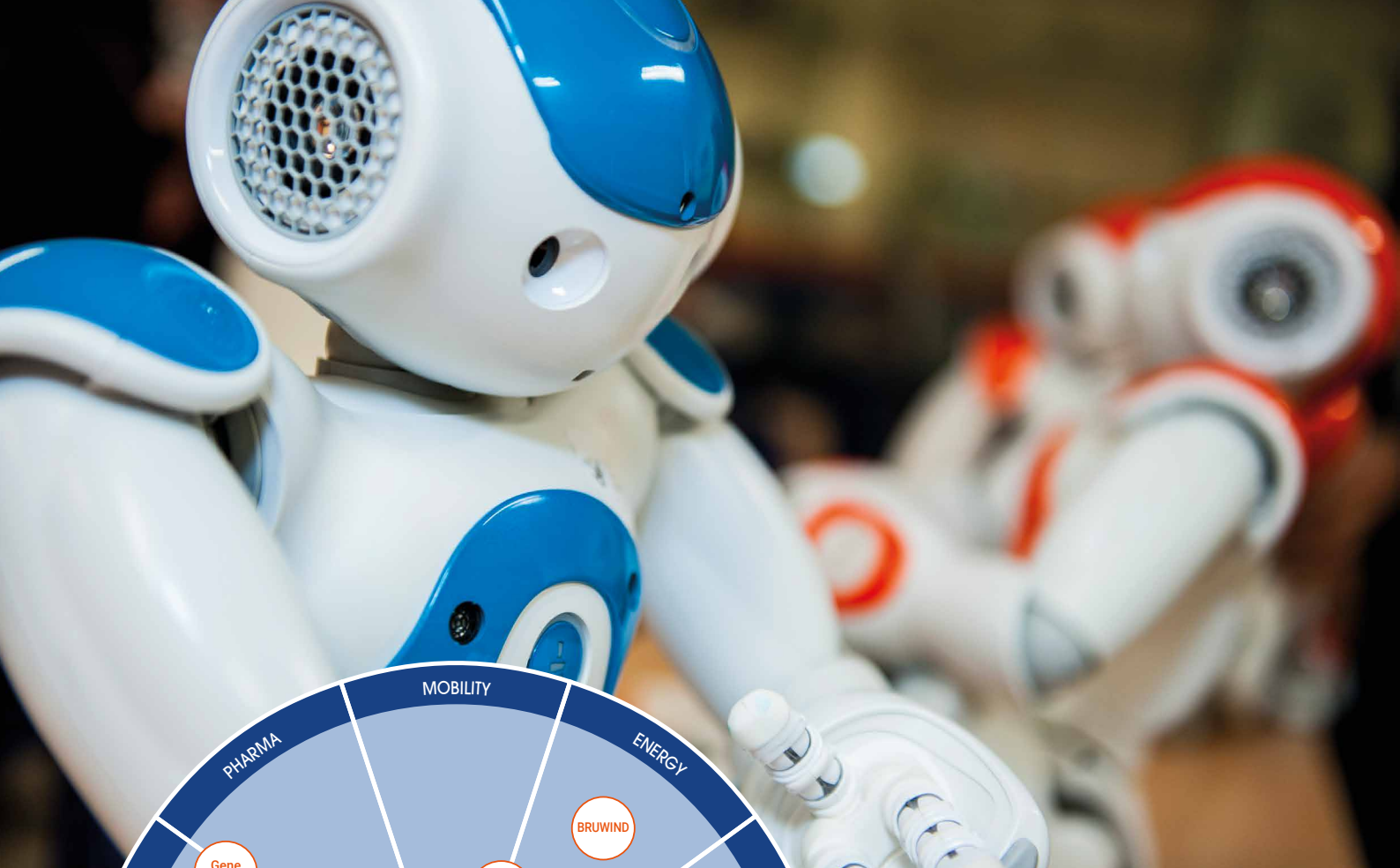
Being part of society and with a confident look on the future, we continuously aim to improve our valorisation strategy. Looking back at 2015 we hope 2016 will be even more productive!

Sonja Haesen,
Director VUB TechTransfer, VUB



"We strive to deliver innovations that positively impact our society"

Hugo Thienpont, Vice rector Innovation and Industrial Policy



IOF-Industrial Research Fund
Flemish government funding for outstanding application driven research to topnotch VUB labs. 13 research groups received IOF funding in 2015.

2015: 4 new 5-year programmes, starting in 2016 with average yearly budget of > € 170.000: ETRO, B-PHOT, PREDICT and IMDO

Government project funding

VUB TechTransfer assists and supports researchers on:

- Flanders VLAIO & FWO calls
- Brussels Innovation and Impuls financing for applied research
- projects with SOC's and light structures
- EU-projects with economic purpose
- other financing from (international) organisations or administrations

FUNDING STRATEGIC & APPLIED RESEARCH

Industrial Research Fund

VUB TechTransfer supports projects financed by the Industrial Research Fund (IOF). Since 2006 Flemish universities receive this government funding according to their valorization output performance: contracts with industry, the number of patents and spin-offs, share in the European Framework Programme for R&D. The VUB invests IOF funding in knowledge centers that exceed the average scale of a standard university's research unit. The funding supports them in carrying out outstanding strategic research and developing new application-oriented inventions with economic potential. The first priority of the IOF funding is the further establishment of a portfolio of potentially applicable and transferable know-how with economic and societal value. It also finances short-term proof-of-concept projects.

15 research groups received IOF funding in 2015:

ETRO	Crossing boundaries with visionary electronics & ICT	CHIS	Chemical engineering
B-PHOT	Photonics and light technologies	IMDO	Industrial microbiology, food biotechnology
BruBotics	Human Robotic Technology	FOBI - 4R-ART	Follicle biology
PREDICT	A generic toolbox for the reliable prediction of lifetime and ageing in electrochemical systems	GeneCure	Gene therapy
MOBI	Urban mobility, sustainable logistics, electric & hybrid vehicles, energy storage systems, life cycle assessment	M2Target	Macrophage-targeted cancer theranostics
BruWind	Turbine technology: aerodynamics, aeroelastics, strength and materials, noise and vibrations	SBRC	Structural Biology Research X-ray crystallography, protein-protein interactions, drug discovery
		IVTD	In vitro toxicology & dermato-cosmetology

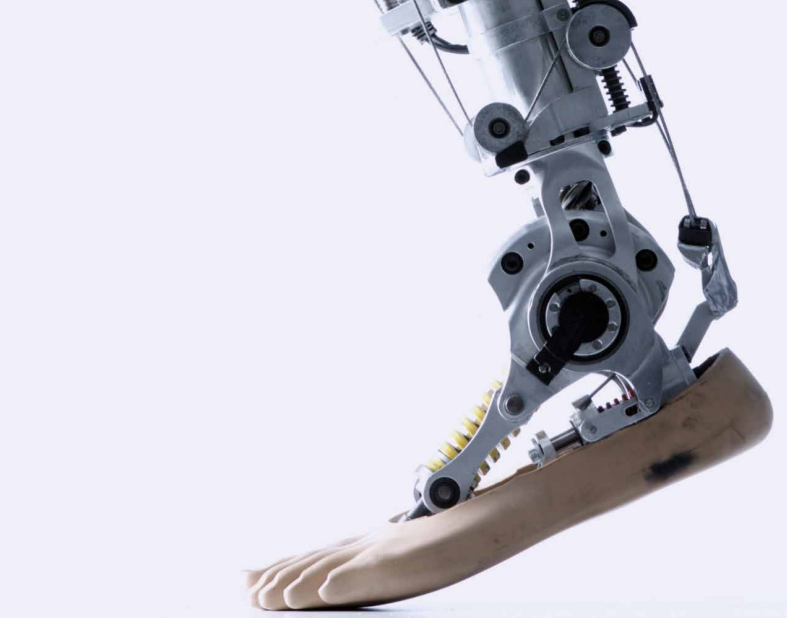
4 new 5-year programmes were selected by the university's IOF-council in 2015 for financing starting in 2016 with an average yearly budget of more than € 170.000: ETRO, Electronics & Informatics - *Staying ahead in R&D by making sense of hyper-dimensional sensors and signals*; B-PHOT, Brussels Photonics - *Cross-KET photonics: B-PHOT's third industrial innovation & valorisation wave to strengthen its European pole-position*; PREDICT, Electrochemical & Surface Engineering - *To become an expert European consortium for reliable prediction of lifetime and ageing in electrochemical systems*; IMDO, Industrial Microbiology and Food Biotechnology - *To continue as worldwide key player in food biotechnology research*.

Government project funding

The latest years more and more funding has been made available by the Flemish and Brussels' governments for applied and strategic research, whether or not in collaboration with the industry. Since 2007 the global budget for VUB has been steadily growing. The means of the federal government have dropped during the years but are compensated by an increase in IOF-budget and VUB-groups selected for EU-programmes.

VUB TechTransfer gives assistance and support to researchers on the calls below:

- Flanders VLAIO & FWO calls (former IWT): Strategic Basic Research, Applied Biomedical Research, VIS (innovation stimulation), Baekeland mandates, Innovation mandates, O&O projects with industry
- Brussels Innovation and Impuls financing for applied research: Co-create (Impuls programmes), Bridge (strategic platforms), Launch (Spin-off in Brussels), Doctiris, Connect (International collaboration)
- other (international) organisations or administrations: financing for applied projects with valorisation potential
- projects with SOC's and light structures (e.g ICON)
- EU-projects with economic purpose



Quick overview Flanders project funding

Strategic Basic Research IWT (FWO since 2016)

for innovative research projects with economic or societal potential.

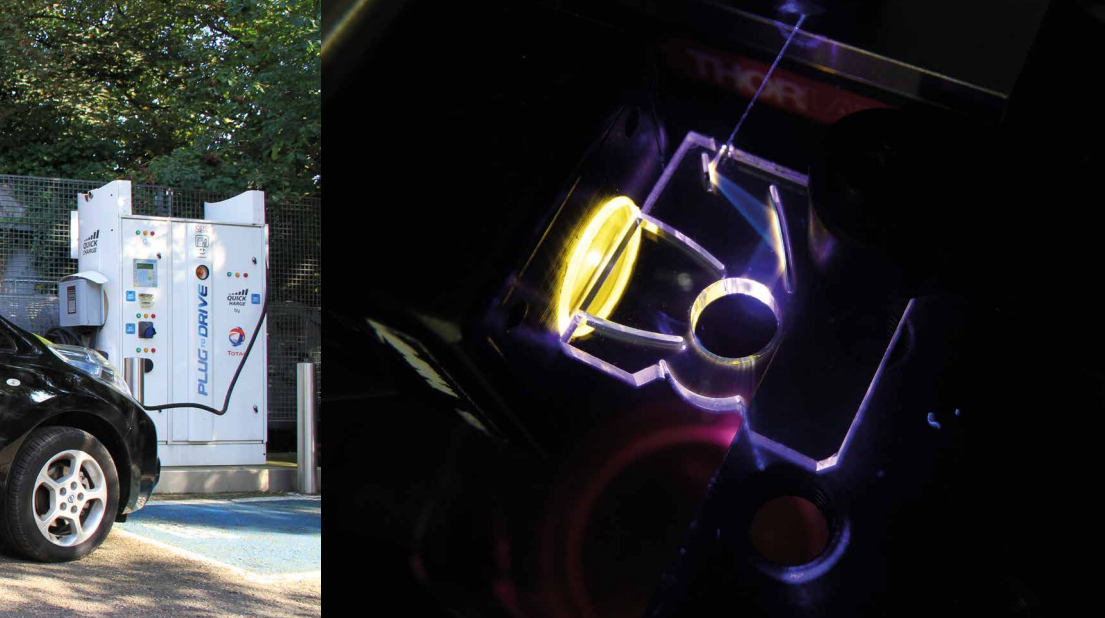
- 5 VUB SBO societal projects (2 as coordinator, 3 as partner)
 - DiSSeCt
 - CATCH
 - POTENTIAL
 - FLAMENCO
 - SEGA
- 3 VUB SBO economic projects (2 as coordinator, 1 as partner)
 - HYMOP
 - CREST
 - TEARLESS
- Baekeland mandates 50% of VUB's project applications accepted
- Applied Biomedical Research: 2 VUB

Strategic Research Centers (SOC's)

- bridge between fundamental and applied research
- important for Flanders' economy
- VUB participates in: iMinds, IMEC, VITO, Flanders Make and VIB

Flanders Make

- 2015 first full operational year
- research center on manufacturing:
 - Flanders' DRIVE
 - Flanders' Mechatronics Technology Centre (FMTC)
 - 5 Flemish universities
- For VUB, 3 strategic partners: MOBI, B-PHOT, BRUBOTICS



FLANDERS PROJECT FUNDING

The Strategic Basic Research programme of Flanders' FWO

supports innovative research projects with economic or societal potential. End users as well as research centers are involved. In 2015 the available SBO-budget for all universities amounted to more than 40 mio euro for regular SBO-calls as well as international projects, such as the bilateral call STW in The Netherlands and ERANET-projects. Overall 16 projects were selected. For SBO societal projects, VUB is selected in 5 of 6 by FWO supported projects (2 as coordinator, 3 as partner) or 33% of the total budget. For SBO-Economic projects 3 of 7 VUB-projects have been approved (2 as coordinator, 1 as partner) or 9% of the budget. Including STW this amounts to 10%.

For Baekeland mandates 50% of VUB's project applications were accepted, in line with the normal success rate. What Applied Bio-medical Research is concerned, 2 out of 8 approved projects are VUB or 27% of the total subsidies of this channel.

SBO's acknowledged in 2015:

- **DiSSeCt:** Distributed Semantic Software Solutions for Complex Service Composition
- **CATCH:** Community Sport for AT-risk youth: innovative strategies for promoting personal development, health and social CoHesion (*)
- **POTENTIAL:** Power to teach all. Competence development to create inclusive learning environments
- **FLAMENCO:** FLAnders Mobile ENacted Citizen Observatories (*)
- **SEGA:** The Science and Ethics of stem cell-derived Gametes
- **HYMOP:** Hypermodelling strategies on multi-stream time-series data for operational optimization (*)
- **CREST:** Climate resilient coast. Wave action in a changing climate: effects on the dynamics of the coast and implications for future safety strategies
- **TEARLESS:** Secure Coordination of Rich Internet Application Tiers (*)

(*) VUB coordinator

Strategic Research Centers (SOC's)

have been created as a result of excellent scientific research in broad domains such as micro- and nano-electronics, biotechnology and broadband technology. They build bridges between fundamental and applied research and are important for Flanders' economy. VUB participates in these SOC's: iMinds, IMEC, VITO and VIB. In October 2014 Flanders Make was founded, 2015 being its first full operational year. This research center on manufacturing clusters Flanders' DRIVE, Flanders' Mechatronics Technology centre (FMTC) and the 5 Flemish universities, with VUB's MOBI, B-PHOT and BRUBOTICS as strategic partners in this SOC. In 2015 VUB participated in several Flanders Make projects with a total budget of 1.9 mio euro.



Quick overview Brussels project funding

Funding from the Brussels Capital Region through Innoviris

Doctiris

- partnerships university-industry through doctorates
- 2015: VUB Software Language Lab - ICT company Emexis
 - enhance quality of internet-based fleet management applications
- Renewal 2 projects:
 - Applied Mechanics: CFD modelling of wind turbine wakes
 - Business department: Risk Optimized Portfolio Strategies

Launch

- creation of new companies
 - Cellsine, new in vitro screening technique

Brussels Retrofit XL

- Strategic platform coordinated by BBRI
- For VUB:
 - Dynstra, ae-LAB
 - RetroCo, ae-LAB
 - LightComp, MeMC
 - SHARC, SURF
 - Wintegrate, IWT



BRUSSELS PROJECT FUNDING

Funding from the Brussels Capital Region through Innoviris

Doctiris

Doctiris projects have the purpose to encourage partnerships between the Brussels Region's academic and industrial actors through doctorate projects. In 2015 a new project was approved within the VUB's Software Language Lab in collaboration with the ICT company Emexis to enhance the quality of internet-based fleet management applications. Two projects were renewed: the first one concerning CFD modelling of wind turbine wakes and their interaction with applications to wind farms and the other one on Risk Optimized Portfolio Strategies.

Launch

Another programme Launch supports the creation of new companies (spin-offs) in the Brussels Capital Region in order to economically promote the results of scientific research. One project was financed to develop and valorise Cellsine, a new in vitro screening technique based on electrochemical impedance spectroscopy.

Brussels Retrofit XL

Retrofitting of the Built Environment (housing), takes the form of a strategic platform coordinated by the BBRI (Belgian Building Research Institute) bringing together research projects being conducted by different partner institutions. All 5 ongoing projects obtained a prolongation for 2015 with additional budget. 2 projects from the architecture ae-LAB: Dynstra, dynamic reuse strategies for the retrofitting of post-war housing in Brussels, and RetroCo, understanding and conserving post-war housing stock in Brussels. LightComp from the Mechanics of Materials and Constructions group concerns design of lightweight building components for renovation and conversion of existing buildings. At Electrochemical and Surface Engineering the SHARC project deals with self-healing coatings in architecture. And the last one Wintegrate from Industrial Sciences and Technology, studies wind-energy and wind conditions in the built environment.

VUB TechTransfer also takes care of follow-up of other projects such as Bridge Secure IT, Co-create, ICT and Health platforms.



Quick overview EU funding support

Purpose

- higher strategic value
- increase in number of submitted proposals
- more approved projects

i-ISO concept

- identification
- information
- stimulation
- support

2015

FP7 63 projects

H2020 16 projects

= 79 projects with year budget in 2015 of nearly € 8.1 mio

H2020 16 projects

- all started in 2015
- total project budget 2015-2020: € 7,9 mio
- 75% of budget linked to clear exploitation strategy

Some examples of projects with a societal-economic finalisation:

ACTPHAST - B-PHOT:

unique "one-stop-shop" for supporting photonics innovation by European companies, especially SME's.

SHERLOC - B-PHOT:

fibre optic sensors for detecting barely visible impact damage in composite structures for aerospace.

BAMB - TRANSFORM, ae-LAB:

development of a concept in (building) material identification, recuperation and re-use + demonstrator student housing at VUB campus.

FIVEVB - MOBI:

development of next generation batteries for electric cars + study on production in large quantities.

BETACELL THERAPY - DRC:

functional beta cell mass by stem cell-derived implants in diabetes patients.

EU FUNDING SUPPORT BY VUB TECHTRANSFER

The mission of VUB TechTransfer concerning EU-support is to develop a unique support for the VUB research groups, resulting in an increase in strategic value, the number of submitted proposals and approved projects. In 2015 a new concept to support VUB research groups in applying for EU-funding was developed and launched. i-ISO is the acronym of:

- Identifying (Identificeren) of EU-funding programmes and their calls.
- Informing (Informereren) the VUB research groups about the programmes and calls.
- Stimulating (Stimuleren) through a dedicated approach to reduce barriers for application for funding. An EU-roadmap is developed and implemented in VUB. An additional stimulation is given through funding at pre and post-proposal level.
- Intensive support (Ondersteunen) in preparing proposals at programme, call and proposal level.

In 2015 VUB counted 79 ongoing EU-projects, 63 under FP7 and 16 under H2020. The 79 projects counted together for a year budget in 2015 of nearly 8.1 million euro. All 16 H2020 projects started in 2015 and count for a total project budget of nearly 7.9 mio euro, of which about 75% is linked to H2020 projects with a clear exploitation strategy, spread between 2015 and 2020.

Some examples of projects with a societal and economic finalisation:

BETACELL THERAPY of the Diabetes Research Center (DRC), is an H2020 project that started in 2015 with a budget for VUB of 3.1 million euro and that runs for 4 years. Despite improved treatment, diabetes remains a chronic disease with major health risks and heavy burden on patients and society. Serious forms are caused by depletion in pancreatic beta cells and associated loss in insulin's homeostatic control throughout life. The objective is to generate a functional beta cell mass by stem cell-derived implants in diabetes patients.

ACTPHAST (Access CenTer for PHotonics innovAtion Solutions and Technology Support) is a unique "one-stop-shop" for supporting photonics innovation by European companies, especially SME's. It is financially supported by the European Commission under the FP7 framework. ACTPHAST, co-ordinated by B-PHOT, supports and accelerates the innovation capacity of European companies by giving them direct access to the expertise and state-of-the-art facilities of Europe's leading photonics research centres (23).

Another **B-PHOT** project concerns the JTI call Clean Sky, a programme resulting from a public-private partnership between the European Commission and the industry (70%). The budget for the project **SHERLOC** granted to VUB is more than 700 k€. B-PHOT develops fibre optic sensors for detecting barely visible impact damage in composite structures for aerospace.

The **TRANSFORM** research group at Architectural Engineering was granted a project of 48 months, **BAMB**, in the call H2020-WASTE-1-2014, for a VUB budget of about 700 k€. The uniqueness of this project is that besides the development of a concept in (building) material identification, recuperation and re-use, a demonstrator will be realized on the VUB campus applied to the student housing.

MOBI's project **FIVEVB**, lasting for 36 months, was approved in the call H2020-GV-1-2014 for a budget of more than 600 k€. Besides development of the next generation of batteries for electric cars, also a study is planned to evaluate the possibility to produce these batteries in large quantities.



Quick overview IP

2015

36 inventions reported

19 new patents filed

- 9 exclusive VUB
- 8 with IMEC
- 1 with VIB
- 1 with OPUS

VUB's total portfolio = 111 active patent families

- 29 exclusive VUB
- 31 with VIB
- 25 with IMEC
- 1 with iMinds
- 25 with other partners

Income through licensing of technologies in 2015: almost € 1.4 mio
3 new exclusive licensing deals with VUB spin-offs

- Confotherapeutics (VIB)
- Camel-IDS
- BioSensource

Legal advice to researchers for

- tech transfer issues
- contracts

Contract management takes care of admin for

- contracts
- funding applications
- ID datasheets

INTELLECTUAL PROPERTY (IP) MANAGEMENT & LICENSING

Intellectual Property (IP) management & licensing

Valorisation of research can occur in many different ways: through partnerships with industry and/or companies, through licensing of intellectual property rights (patents and patent applications, software, confidential know-how, design rights, trademarks, etc.), the launch of spin-off companies and consultancy...

36 inventions were reported in 2015 for evaluation of their potential and 19 new patents were filed, of which 9 exclusive VUB, 8 with IMEC, 1 with VIB and 1 with OPUS. VUB's total portfolio included 111 active patent families: 29 exclusive VUB, 31 with VIB, 25 with IMEC and 1 with iMinds.

Licensing of research results can generate income for the university and creates structural collaborations with companies. In 2015 € 1.367.343 was generated. 3 new exclusive licensing deals were closed with VUB spin-offs Confotherapeutics (VIB), Camel-IDS and BioSensource. A privileged relationship between a lab and a spin-off company is beneficial to the growth of the company, and certainly in its early stages.

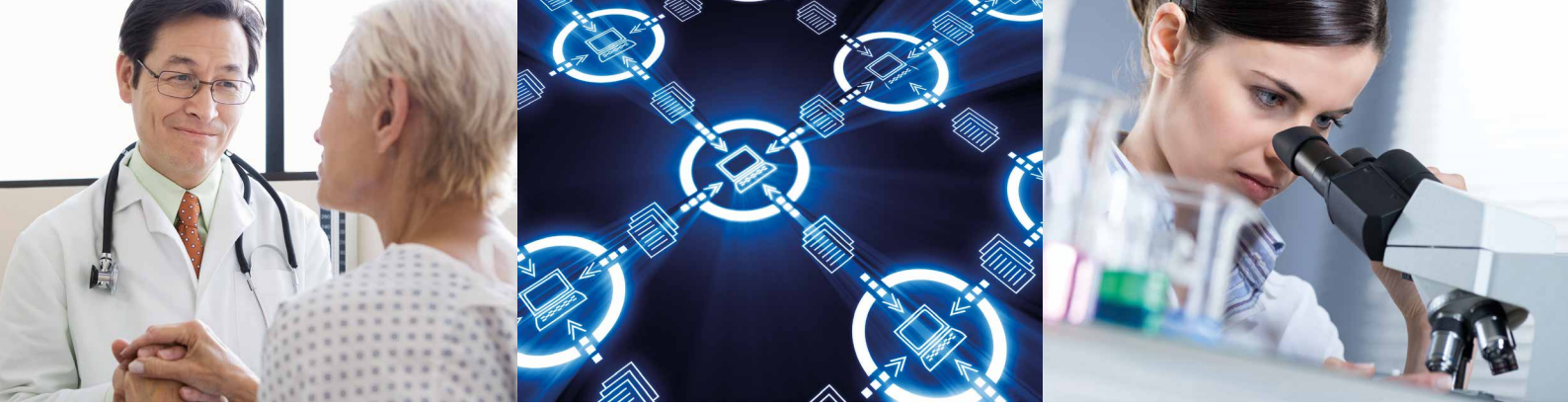
VUB technologies available for licensing or for R&D partnerships are communicated through bilateral contacts with industry, networking events, the VUB TechTransfer website, newsletter, conferences such as Knowledge for Growth, Copy Talks and other specific channels.

Licensing opportunities in 2015, mostly patented, vary from in vitro liver toxicity screening or drug screening in diabetes over diffuse light spectroscopy for quality control of liquids and food authentication, alternative torsion springs, an integrated lighting/ventilation system for operation rooms, Q-switched CO2 lasers and fuel cells.

Legal advice for techtransfer & contract management

The legal cell of VUB TechTransfer provides legal assistance to the VUB research community in all sorts of tech transfer issues, draws up contracts and answers questions regarding contracts. Contracts are only signed by the rector after legal review.

The Contract Administration Management employees assist with the administrative follow-up of contracts, funding applications and ID datasheets (draft, signature by rector, administration).



Quick overview spin-offs

2015

27 active VUB spin-offs

21 reports of potential spin-offs

3 new spin-offs

- Confo Therapeutics (VIB) - drug discovery based on GPCRs, spin-off of VUB's research group Structural Biology Brussels and VIB
- Camel-IDS - targeted radionuclide therapeutic solutions for cancer patients, spin-off of VUB's Molecular Imaging (MIMA) research group and the UZ Brussel Nuclear Medicine department
- BiosenSource - VUB spin-off in bioinformatics founded by doctor in Bioengineering Sciences Liesbet Van Oeffelen



Qbic invests in

- Confo Therapeutics - VIB-VUB spin-off ~2015 - drug discovery based on GPCRs
- Pharmafluidics - VUB spin-off ~2010 - integrated milli- to nano-engineered solutions for mixing, separation and reaction processes
- Sentiance - implements a.o. technology developed at VUB - Ambient Intelligence

Some highlights

- Sony acquires SoftKinetic, producer of 3D Sensors
- Colibra, the market leader in Data Governance, raises 20 million euros
- eTheRNA secures EUR 24 million to develop its TriMix mRNA-based immunotherapy

Number of employees

+100 Ablynx, Colibra

+25 Numeca, SoftKinetic Systems (before acquisition by Sony)

< 25 other spin-offs

SPIN-OFF MANAGEMENT

Creation of university spin-offs

Spin-offs are companies whose main activities are based on the formal transfer of research results originating from the university or university college. This transfer can take different forms, e.g. a license agreement or share capital participation, depending on the specific case. In 2015 VUB had generated a total of 27 active spin-offs based on research in various fields : engineering, life sciences, economics, ICT, sports ... In this context, VUB also collaborates with strategic research centers such as VIB, IMEC, iMinds, Flanders Make and VITO. VUB TechTransfer plays a crucial role in identifying, developing and evaluating VUB spin-off projects. To maximise the survival of a start-up a lot of attention is paid to other factors than the innovative technology: market strategy, value proposition, a complementary team.

In 2015 VUB created 3 new spin-off companies.

- **Confo Therapeutics** is a spin-off of VUB's research group Structural Biology Brussels and VIB. It is a drug discovery company and originates from the CONFO® technology developed by Prof. Jan Steyaert and his team (VIB/VUB). For the first time this technology allows medically relevant GPCRs (G-protein coupled receptors) to be stabilized in their active functional state, which is essential for drug discovery.
www.confotherapeutics.com
- **Camel-IDS** develops targeted radionuclide therapeutic solutions for cancer patients, sparing healthy tissues. It is a spin-off of VUB's Molecular Imaging (MIMA) research group and the UZ Brussel Nuclear Medicine department, headed by Prof. Tony Lahoutte.
www.camel-ids.com
- The bioinformatics services of **BiosenSource** - a VUB spin-off founded by doctor in Bioengineering Sciences Liesbet Van Oeffelen - aim to optimize measurement protocols, data processing and analyses in terms of speed, quality and user-friendliness.

The Qbic Fund is a multi-sector fund supporting spin-off companies of the Ghent, Brussels, Antwerp and Liège university associations and of VITO. The investment approach is based on early in-depth and independent review and analysis followed by hands on involvement and support. In 2015 Qbic invested in 2 VUB spin-offs: **Confo Therapeutics** (VIB-VUB), a new drug discovery company based on GPCR research and **Pharmafluidics**, established in 2010, developing integrated milli- to nano-engineered solutions for mixing, separation and reaction processes. Qbic also invested in **Sentiance** that implements a.o. technology developed at VUB to provide Ambient Intelligence to enable contextual and situational experiences to smart-phones, wearables and connected devices.

Some highlights:

- **Sony acquires SoftKinetic Systems**, producer of 3D Sensors, which becomes a wholly-owned subsidiary of Sony. In 2011, SoftKinetic originated from a merger with Optrima, a spin-off from the VUB Electronics and Informatics lab. The team designed 3D Time-of-Flight (ToF) sensors and cameras that were able to recognize movements. With the purchase of Softkinetic, Sony secures its position as the number one in the world as one of the largest manufacturers of camera sensors in smart phones, game consoles and related equipment. Almost all applications for ordinary image sensors may benefit from additional 3D information, and not in the least the emerging new consumer products such as Virtual Reality, Augmented Reality, self-propelled vehicles, or the internet of things.
- **Collibra, the market leader in Data Governance, raises 20 million euros.** Collibra, founded in 2008 as a spin-off from the Laboratory for Semantic Technology and Applications Research (STARLab), develops software that meets the needs of businesses in terms of data and information (Data Governance) and helps them to solve problems connected with the internal and external information flows. Collibra is one of the most advanced players in the market. In the United States, where they opened a branch office in 2013, Collibra confirmed its expertise and drew the attention of Index Ventures, which invested 20 million euro. Index Ventures is a venture capital fund that supports the best and most ambitious entrepreneurs.
- **eTheRNA immunotherapies secured € 24 million** in a series A investment round with venture capital enabling the company to continue the development of its proprietary TriMix mRNA-based immunotherapies for melanoma, breast cancer and infectious diseases. eTheRNA was founded in January 2013 out of the VUB Laboratory for Molecular and Cellular Therapy (LMCT). Headed by Prof. Kris Thielemans in tandem with Prof. Bart Neyns, the LMCT has driven both the discovery and development of TriMix. This mRNA-based technology focuses on enhancing and modulating dendritic cells which fulfill a fundamental role in eliciting the human immune response to cancer and infectious diseases.



Quick overview entrepreneurship education

Purpose

raise awareness of (technology) entrepreneurship

Since 1995 Starter Seminars - (technology) entrepreneurship fundamentals

Since 2014 Advanced Starter Seminars - business & management issues in-depth

New in 2015

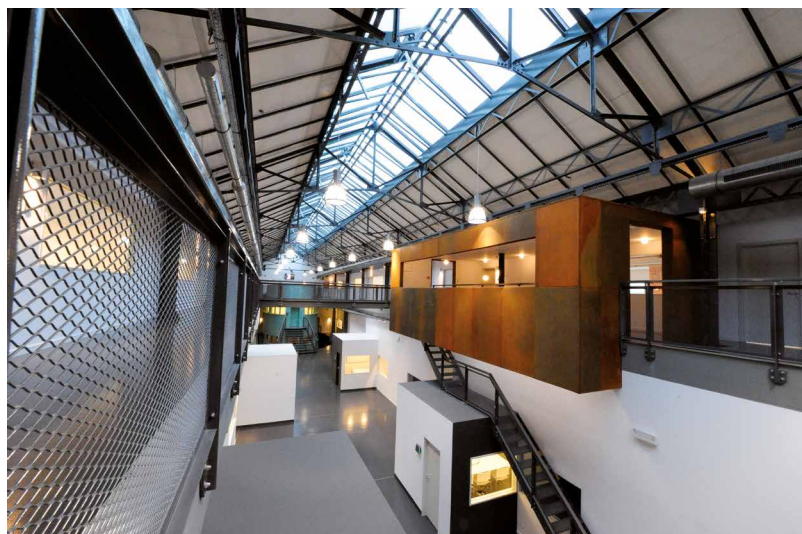
- Socialization of Entrepreneurship
- Pitch your Project
- VUB TechTransfer entrepreneurship community on LinkedIn

Number of participants

- almost 1000 since the start
- in 2015: 75 participants

Research parks & incubators

- ICAB Business & Technology Incubator:
45 companies, 280 employees + 220 self-employed entrepreneurs/freelancers member of BetaCowork
- Innovation & Incubation Center Brussels (IICB) :
12 companies, 45 employees,
- Researchpark Zellik: 26 companies



ENTREPRENEURSHIP EDUCATION

BOOST YOUR BACKGROUND IN ENTREPRENEURSHIP AND LAUNCH YOUR OWN BUSINESS

VUB TechTransfer wishes to raise more awareness of (technological) entrepreneurship among master students, PhD, researchers and young professionals and organizes a number of evening courses.

Since 1995 VUB TechTransfer organizes the Starter Seminars that provide a short but intensive course on the fundamentals of entrepreneurship and business. A variety of topics is covered such as developing a business plan, finance, marketing, the complex issues surrounding patenting,... . In 2014 the Advanced Starter Seminars were introduced, a follow-up course where business aspects and starting up a company are treated more in-depth. New in 2015 were a session on the 'Socialization of Entrepreneurship' organised with Crosstalks and the possibility to 'Pitch your Project' before an audience of fellow future entrepreneurs and professionals. The seminars are preceded by a Launch Event. This event is open to anyone interested in (technological) entrepreneurship and tech transfer and includes testimonials of VUB entrepreneurs.

Marc Goldchstein from Business Technology and Operations (BUTO) and Tech Transfer Officer Entrepreneurship Education is the main lecturer and content coordinator. For several seminars expert-speakers from VUB or the business world are involved. Since 1995 VUB TechTransfer has reached almost 1000 participants interested in (technology) entrepreneurship. In 2015, 75 participants joined both series. A LinkedIn group was created to post entrepreneurship related issues and stimulate interaction between participants.



"As an engineer or scientist you don't have any background in business management. Through the starter seminars I obtained the necessary basic knowledge about marketing, business planning, financial and other aspects when starting up a company. Not in the least thanks to a number of inspiring speakers. Now I have the privilege myself to testify as an entrepreneur at one of the sessions!"

Daniël Van Nieuwenhove
co-founder and CTO VUB spin-off Optrima, merge with SoftKinetic (now Sony)

RESEARCH PARKS & INCUBATORS

Companies committed to supporting research and collaboration with the VUB can rely on appropriate facilities and infrastructure in one of our research parks and incubation centers in Flanders and Brussels.

ICAB Business and Technology Incubator (ICAB) offers an ideal work environment for innovative start-ups in the ICT and engineering sectors. ICAB is situated near the VUB campus at Etterbeek, on the Arsenaal site.

www.icabrussel.be

The Innovation & Incubation Center Brussels (IICB) offers high quality services to starting and young enterprises to enter the market of high-tech products or services and is situated in the research park Zellik not far from the university medical campus and UZ Brussel. www.iicb.be

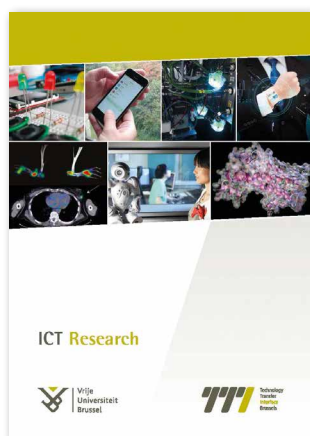
The research park Zellik is an area developed as a location for high-tech or research-based companies. It is developed by the VUB, POM Vlaams-Brabant, the intermunicipal company Haviland Intercommunale.

www.researchparkzellik.be



Innovatiebeurs

8 oktober 2015 • Eskimofabriek Gent



The VUB TechTransfer communication unit takes care of raising awareness within the VUB research community concerning all aspects of valorization as well as promoting the VUB's knowledge and expertise to the outside world. It organizes the VUB (Advanced) Starter Seminars and in 2015 supported the communication of VUB Foundation.

The communication tools include a website, an electronic newsletter with link in VUB newsletter, promotion material, print and download versions of research overview and other informative brochures, ... all with respect to the VUB corporate identity. Press releases are prepared in collaboration with VUB Marcom. VUB TechTransfer also cooperates with partners and other channels to promote technologies and project calls, and (co-)organises events, seminars, workshops, etc

Some examples to illustrate the activities of VUB TechTransfer Communication & Events:

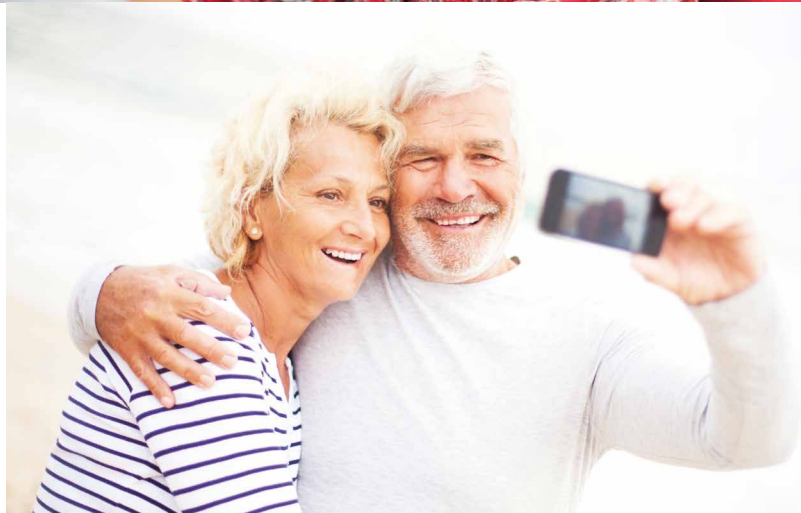
- TTI-news: 39 e-newsletters were sent in 2015 to a target group of about 4000 receivers; 358 news items and 106 calendar items were posted on the website.
- Idea Notebooks, a small booklet with crucial information about technology transfer and valorisation, were sent to VUB's research community and external partners.
- 2 research brochures were finalised: Big Data and ICT.
- VUB TechTransfer participated at Ondernemen/Entreprendre 2015 at Tours & Taxis together with a.o. Innoviris and ULB in the Innovation section at the booth of the Brussels Region organised by impulse.brussels.
- With the TTO Flanders platform of the 5 Flemish university Tech Transfer Offices, VUB TechTransfer participated at Knowledge for Growth, showcasing photonics innovative applications such as 'color mixing with LED's for display and projection' and 'infra-red imaging for safety and security'. VUB's biotech licencing opportunities were actualised and put in the spotlight. VUB TechTransfer's communication cell actively participates in the TTO Flanders Communication work group, co-maintaining the website, promo material,
- Input for VLIR-brochure 'Universiteiten denken en doen', highlighting the collaboration between the 5 Flemish universities and industry, and participation with TTO Flanders booth at VLIR-event.
- For VUB Foundation: 'Water voor iedereen' dossier , VUB 2020 invitation, Learning & Innovation Center and Science & Technology Park brochures.
- Organisation of the internal 'Certificate of Appreciation Ceremony', a new VUB award as recognition for the contribution, quality work, and dedication in promoting and valorising VUB's technological excellence around the globe. This first award was handed to the people involved in the success story of Opprima/SoftKinetic. In October 2015 Sony announced the acquisition of SoftKinetic Systems.
- Participation with a booth at 5th 'Innovatiebeurs' in Ghent, match making event for companies and experts.
- WTCB-Innoviris innovation meetings: 'Light and visual comfort' took place at VUB's Electronics and Informatics dept.



Quick overview

VUB Foundation = relation building and fundraising for education, research and campus of the future

- Legacies = individual philanthropy, FON (Fonds op Naam)
 - > investing in specific themes
 - > 1970-2014: 4.8M €, now 2.5M€ per year
- Corporate relations > investing in Chairs
 - > 35 active chairs in 2015, value € 1.9 mio
- Campaign VUB2020 = corporate and individual
 - > investing in:
 - Renovation swimming pool
 - Learning & Innovation Center (L&IC)
 - BRUTUS, Brusselse Tutoren voor Scholieren



VUB Fellowship

- unique personalities
- strengthen ties between Academia and Society
- 27 new in 2015, 76 in total

about 1200 loyal donors

Results: revenue in 2011 € 0.9M → 2015 € 5M & € 3M pledges

VUB FOUNDATION

INVESTING IN EXCELLENCE

The VUB is always keeping an eye on the future. VUB stands for innovation in education and research. In 2012 VUB Foundation was created, a strategic component of the VUB that is responsible for all philanthropic fundraising. The VUB fundraising team is part of the VUB TechTransfer and is the central coordination point of the university for all fundraising activities, such as gifts, legacies, sponsoring,... . In 2011 the income based on gifts, sponsoring and chairs amounted to € 1 mio. But in 2015 the total sum reached € 8 mio (incl € 3 mio pledges). This enormous increase is due to a higher number of chairs, a corporate fundraising system for specific research projects and several legacies, and lies high above the estimated results.

Chairs are an excellent means to financially support education and research and to obtain a long term engagement. The strategic plan at the creation of VUB Foundation in 2012, focused mainly on chairs. In 2015 VUB counted 35 active chairs with a value of € 1.9 mio. Chairs concern socially relevant matters. Examples are the 'History and Philosophy of Sciences', 'Social Entrepreneurship' and 'TE connectivity' chairs.

In the framework of the VUB2020 campaign - the future vision and strategy of VUB - the main 2 projects supported by Foundation are: the renovation of the swimming pool and the construction of the Learning & Innovation Center (L&IC). The swimming pool is a project with high societal impact for which a.o. a crowdfunding campaign was organised. 4 companies have committed themselves to not only financially support the L&IC project, but also assist with their expertise.

Not only structural partners donate, but anyone interested can contribute through crowdfunding campaigns. In total about 1200 persons made a gift to VUB up to and including 2015.

Legacies

are also an important means of supporting VUB's future. 2 legacies were secured in 2015 for research in the medical sector. The partnering with testament.be is important to obtain visibility throughout Belgium.

Academia meets Society - Fellowships

Through the VUB Fellowship programme academics, society, and business meet to discuss joint challenges, exchange experiences and share good practices. "Fellow VUB" is the highest grade of membership for our Alma Mater, a title bestowed upon unique personalities: top-level business people, visionary decision makers, socially relevant personalities. In 2015, 27 new Fellows were introduced. In total VUB counted 76 outstanding Fellows.

"We are proud to have 76 outstanding Fellows that strengthen the ties between Academia and Society. Together with the Fellowship community, we continue our efforts for the university of the future."

Prof. dr. Hugo Thienpont
University Fellowship Coordinator



Quick overview Crosstalks

Close collaboration with vicerector Innovation and Industrial Policy and VUB TechTransfer

- bottom-up and interdisciplinary
- open exchange dynamic of knowledge
- thematic encounters
- active participation of key players from all levels of society
- ad hoc initiatives
- long term projects
- inspiring publications

In 2015 48 activities (co-)organised by Crosstalks

- Casterman-Hamers Chair about History and Philosophy of Sciences, 2013-2021
- Process leader 12 CICI-projects, 2013-2015
- Entr'Acte: 3 > Jean Paul Van Bendegem - Jurgen D'Hondt - Wim Distelmans
- Selfcity Ateliers
- Difference Day
- Campustalks
- 'Redelijk Eigenzinnig' debate series and course
- ...

CROSSTALKS

THE ACADEMIC AND CORPORATE EXCHANGE PLATFORM IN SEARCH OF A FUTURE OF PROSPERITY AND FREEDOM

VUB Crosstalks is a unique kind of academic and corporate networking platform launched in 2003. Working bottom-up and interdisciplinary, Crosstalks creates an open exchange dynamic of knowledge through thematic encounters, beyond specific disciplines and with the active participation of key players from all levels of society, with an open and collaborative approach. The Crosstalks format encourages constructive dialogues on policy probing issues, engaging academic researchers, scientists, artists, corporate leaders, and creative entrepreneurs in the discussion.

Ad hoc initiatives as well as long term projects are organised and in consultation with the vice rector Innovation and Industrial Policy. Inspiring publications give an impetus to future collaborations in research and development. The close collaboration between the VUB TechTransfer and Crosstalks reinforces the interaction inside the university as well as between academia, society and industry. Crosstalks regularly collaborates with cultural partners as Bozar, Vrijstaat O and Kaaitheater and socio-economic organisations as Oikos and VLIR-UOS.

Since 2013 Crosstalks coordinates the Casterman-Hamers Chair about History and Philosophy of Sciences that runs till 2021. From 2013 to 2015 Crosstalks was process leader for 12 CICI-projects concerning innovation with the creative industries, an initiative of Flemish minister Ingrid Lieten. Crosstalks also initiated Entr'Acte, a festive event for researchers who receive the VUB Research Council award for Social Valorisation, consecutively awarded to philosopher Jean Paul Van Bendegem, Jurgén D'Hondt (professor fysica leading the CMS experiment in Cern), and Wim Distelmans (cancer specialist and pioneer in the recognition of palliative care and euthanasia).

In total 48 activities were (co-)organised by Crosstalks in 2015, including the Selfcity Ateliers with BRAL & Brussels Academy on the future of urban commons, the Difference Day in Bozar, the Campustalks' series and internationally directed salons and exclusive expert meetings. Crosstalks also supports the new interdisciplinary course and debate series that was introduced in the academic year 2015-2016 with as theme the VUB motto 'Redelijk Eigenzinnig' to reflect with a critical but open mind on important societal issues.



VUB TECHTRANSFER TEAM 2016

Technology transfer and valorization of research results cover a wide range of interactions between the university and society. A multidisciplinary team of experts offers a one stop shop to facilitate collaboration between the VUB, society and industry.

To contact the VUB TechTransfer-team, phone or mail to:

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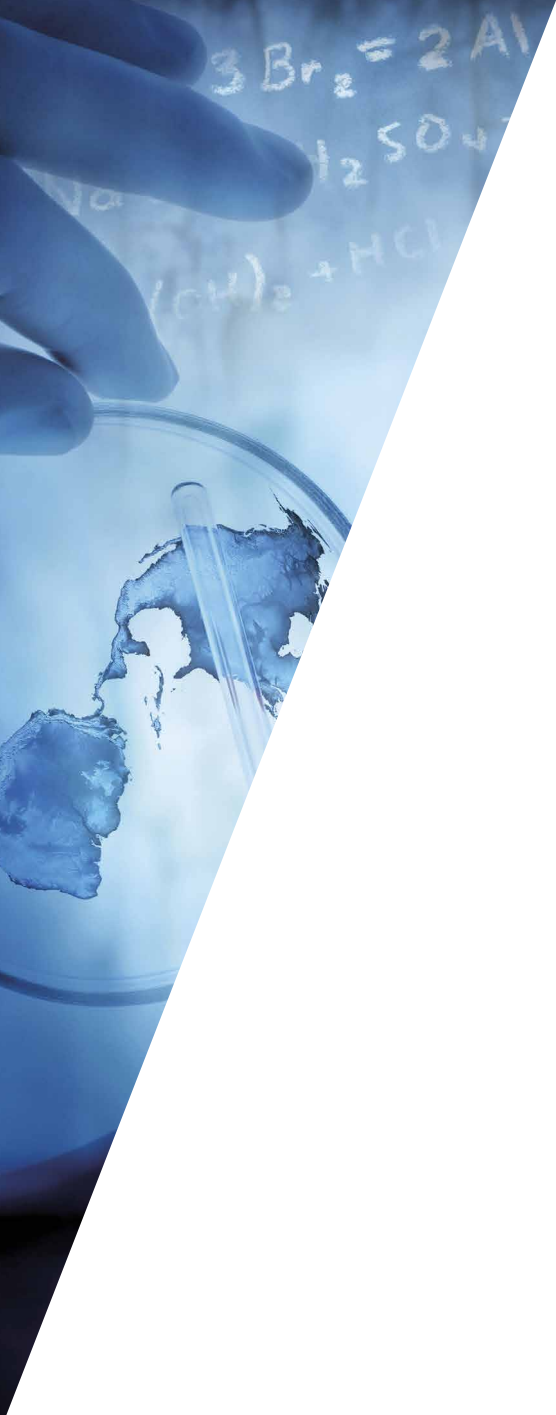
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